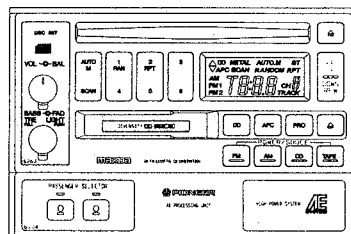


2407

# Service Manual

**PIONEER**  
The future of sound and vision.

• DEH-K4041ZM



**ORDER NO.  
CRT 1196**

**TUNER DECK • CD AMPLIFIER**

**DEH-K4041ZM** US

**DEH-K4141ZM** US

**TUNER DECK • CD PLAYER**

**DEX-K4141ZM-91** US

**AE AMPLIFIER**

**XF-4041ZM-91** US

**XF-4141ZM-91** US

• These models have been installed in MAZDA RX-7.

US

	MAZDA No.
DEH-K4041ZM	FC04 66 9W0
DEH-K4141ZM	FC32 66 9W0
DEX-K4141ZM-91	FC04 66 AC0
XF-4041ZM-91	FC04 66 AF0
XF-4141ZM-91	FC32 66 AF0

These models are used in combination with GM-4041ZM and GM-4141ZM.

## CONTENTS

1. SPECIFICATIONS .....	2	11. SCHEMATIC CIRCUIT DIAGRAM (3) .....	70
2. GENERAL GUIDE .....	3	12. CONNECTION DIAGRAM (3) .....	72
3. CONNECTOR FUNCTION DESCRIPTION .....	5	13. CONNECTION DIAGRAM (4) .....	75
4. DISASSEMBLY .....	5	14. SCHEMATIC CIRCUIT DIAGRAM (4) .....	78
5. BLOCK DIAGRAM .....	8	15. CD MECHANISM EXPLODED VIEW .....	80
6. ADJUSTMENT .....	10	16. CASSETTE MECHANISM EXPLODED VIEW .....	84
7. CONNECTION DIAGRAM (1) .....	50	17. CHASSIS (1) EXPLODED VIEW .....	87
8. SCHEMATIC CIRCUIT DIAGRAM (1) .....	58	18. CHASSIS (2) EXPLODED VIEW .....	90
9. CONNECTION DIAGRAM (2) .....	61	19. AE PROCESSING UNIT EXPLODED VIEW .....	93
10. SCHEMATIC CIRCUIT DIAGRAM (2) .....	64	20. ELECTRICAL PARTS LIST .....	96

**PIONEER ELECTRONIC CORPORATION** 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan

**PIONEER ELECTRONICS SERVICE INC.** P.O. Box 1760, Long Beach, California 90801 U.S.A.

**PIONEER ELECTRONICS OF CANADA, INC.** 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada

**PIONEER ELECTRONIC [EUROPE] N.V.** Keetberglaan 1, 2740 Beveren, Belgium

**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

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2407

## DEH-K4041ZM

- DEX-K4141ZM-91, XF-4041ZM-91 and XF-4141ZM-91 are supplementary model number. These are identical to the DEH-K4041ZM and DEH-K4141ZM except for the addition of the following items.

Description	AM FM CASSETTE CD COMBI- NATION DEX-K4141ZM-91	AE PROCESSING UNIT XF-4041ZM-91	AE PROCESSING UNIT XF-4141ZM-91
Carton	CHG1573	CHG1574	CHG1575
Styrofoam	CHP1206	—	—
Styrofoam	CHP1207	—	—
Cover	CEG1042	CEG1051	CEG1051
Installation Manual	CRB1119	CRB1119	CRB1051
Bracket	CNC2770	CNC2358	CNC2358
Bracket	CNC2771	—	—
Bracket	CNC2498	—	—
Screw	BMZ50P080FMC	—	—
Screw	CBA1096	—	—
Holder	CNC2531	—	—
Polyethylene Bag	CEG1041	—	—
Screw Assy	No spare part	No spare part	No spare part
Screw	BMZ30P050FMC	—	—
Screw	BMZ50P080FMC	—	—
Screw	CMZ50P080FMC	—	—

### Note:

- See the separate manual CX-173 (CRT1161) for the CD mechanism description.
- See the service manual CDX-3 (CRT1177) for CD mechanism circuit description.
- See the separate manual CX-156 (CRT-468) for the cassette mechanism description.
- Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.

## 1. SPECIFICATIONS

Power source .....	DC 13.2V (10 ~ 15V allowable)
Grounding system .....	Negative type
Weight .....	3.8kg [8.4lbs.]

## Tape Player

Tape .....	Compact cassette tape (C-30 ~ C-90)
Tape speed .....	4.76cm/sec. (+0.14cm/sec., -0.05cm/sec.)
Wow & flutter .....	Less than 0.2% (WRMS)
Frequency response .....	0±5dB (10kHz/315Hz) 0±4dB (125Hz/1kHz) 0±5dB (10kHz/1kHz) -4.5±3dB (70μs, 10kHz)

S/N ..... More than 45dB  
Channel separation ..... More than 35dB

## FM Tuner

Frequency range ..... 87.9 ~ 107.9MHz  
Usable sensitivity ..... Less than 15dB $\mu$  (mono)  
S/N ..... More than 50dB (30%mod., input 54dB $\mu$ )  
Distortion ..... Less than 1.5% (30%mod, input 54dB $\mu$ )  
Stereo separation ..... More than 20dB (1kHz, input 60dB $\mu$ )

## AM Tuner

Frequency range .....	530 ~ 1,710kHz
Usable sensitivity .....	Less than 32dB $\mu$
1-signal selectivity .....	More than 40dB

## CD Player

Distortion .....	Less than 0.03% (1kHz)
S/N .....	More than 75dB
Frequency response .....	-2.5±1dB (20Hz/1kHz)
	0±1dB (20kHz/1kHz)

**AE**

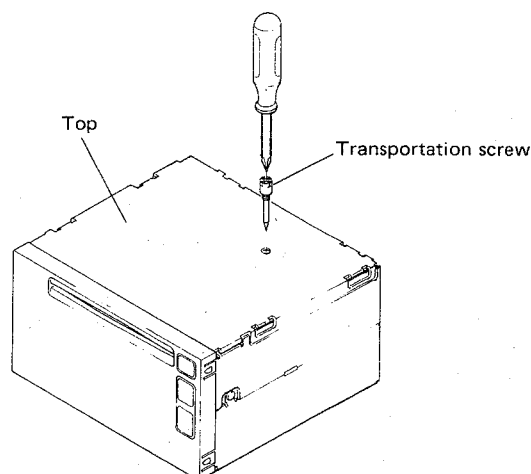
Distortion .....	Less than 0.3% (−10dBs output, 100Hz)
Separation .....	More than 38dB (185mV output, 100Hz)
Frequency response	
(280Hz/100Hz) .....	−2.5±2dB (DEH-K4041ZM)
(280Hz/100Hz) .....	−3±2dB (DEH-K4141ZM)
(750Hz/100Hz) .....	+2.5±2dB
(1.4kHz/100Hz) .....	−7±2dB
(20kHz/100Hz) .....	+1.5±2dB (DEH-K4041ZM)
(20kHz/100Hz) .....	+0.5±2dB (DEH-K4141ZM)
Voltage gain .....	0±2dB (−10dBs output, 100Hz)

## AMP

Continuous power output ..... More than 11W (10% dist. at 1kHz)  
Front voltage gain (L) .....  $35 \pm 2\text{dB}$  (0dBs output at 1kHz)  
(DEH-K4041ZM)  
                  (R) .....  $34.3 \pm 2\text{dB}$  (0dBs output at 1kHz)  
(DEH-K4141ZM)  
                  (R) .....  $37 \pm 2\text{dB}$  (0dBs output at 1kHz)  
Rear voltage gain .....  $29 \pm 2\text{dB}$  (0dBs output at 1kHz)  
Frequency response .....  $-0.5 \pm 2\text{dB}$  (0dBs output 100Hz/1kHz)  
Distortion ..... Less than 0.1% (+10dBs output at 1kHz)

### • CD Player Service Precautions

1. Since these screws protect the mechanism during transport, be sure to affix it when it is transported for repair, etc.
2. For pickup unit (CGY1007) handling, please refer to "Disassembly" (Fig. 10). During replacement, handling precautions shall be taken to prevent an electrostatic discharge (protection by a short pin).
3. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.



## 2. GENERAL GUIDE

### RADIO

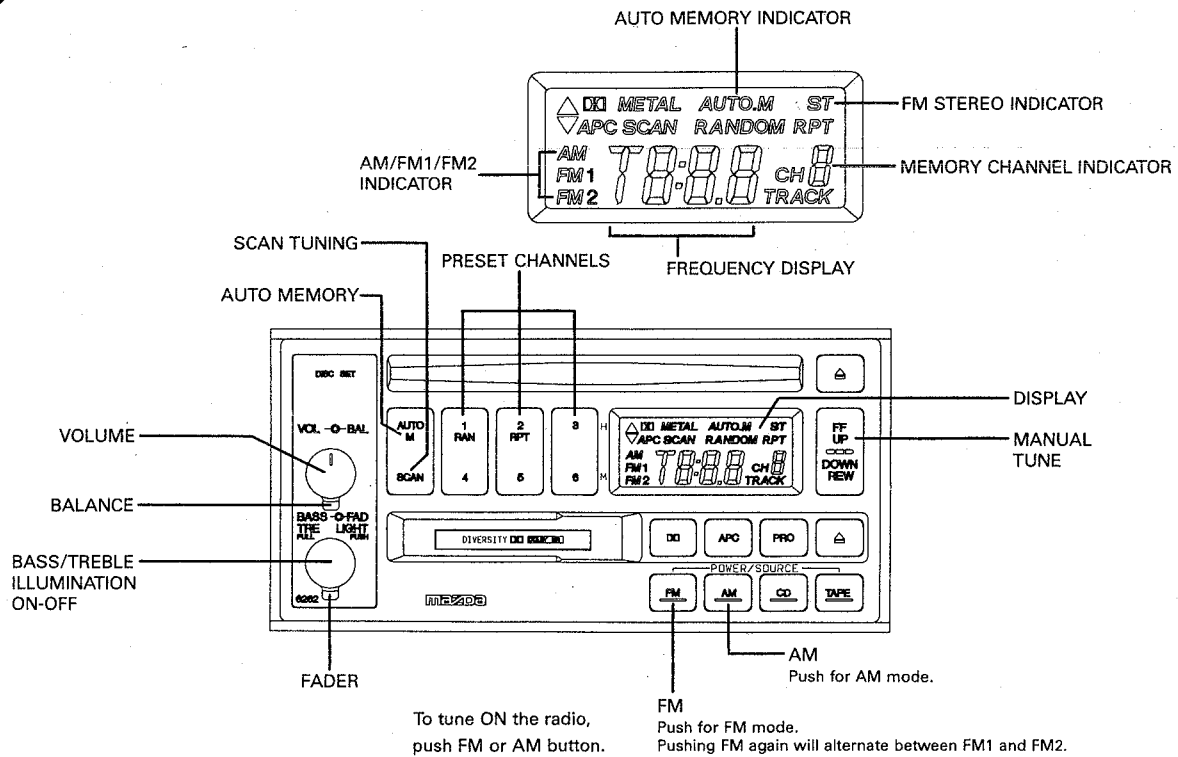


Fig. 1

### CD, CASSETTE

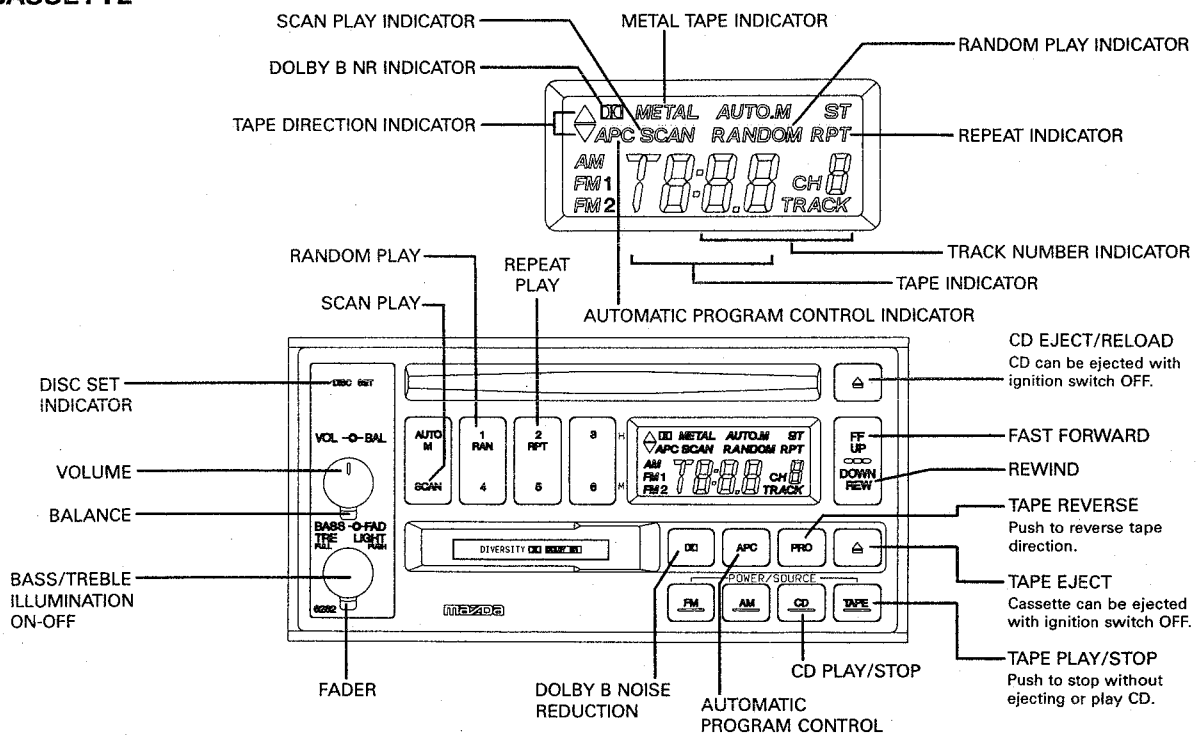
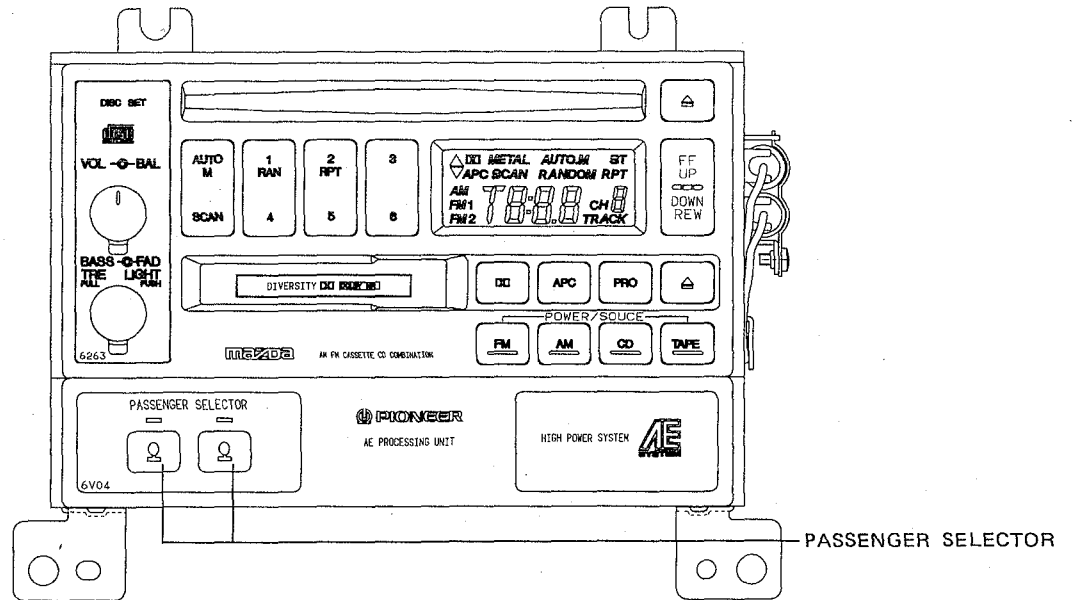


Fig. 2



DEH-K4041ZM



DEH-K4141ZM

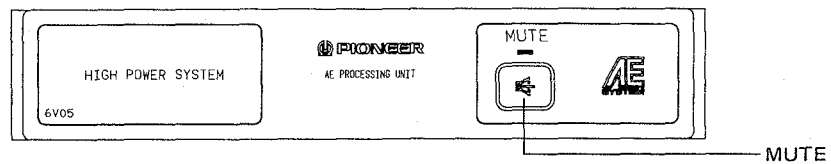


Fig. 3

### 3. CONNECTOR FUNCTION DESCRIPTION

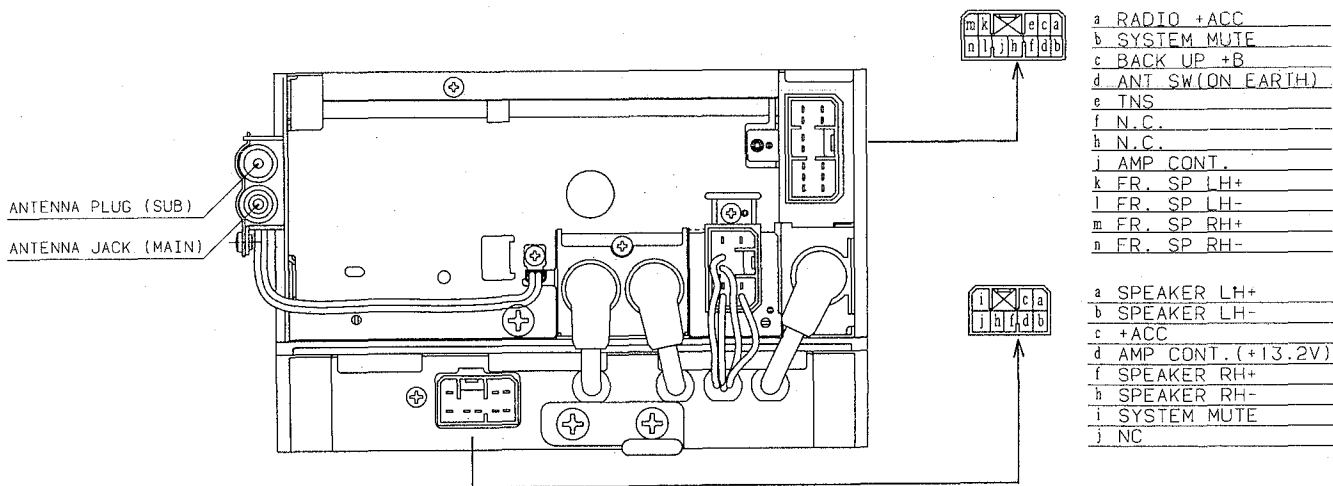


Fig. 4

### 4. DISASSEMBLY

#### • Removing the Case

1. Remove the twelve screws, and remove the bracket.
2. Remove the four screws A.
3. Disconnect the stoppers indicated by arrow, and remove the case.

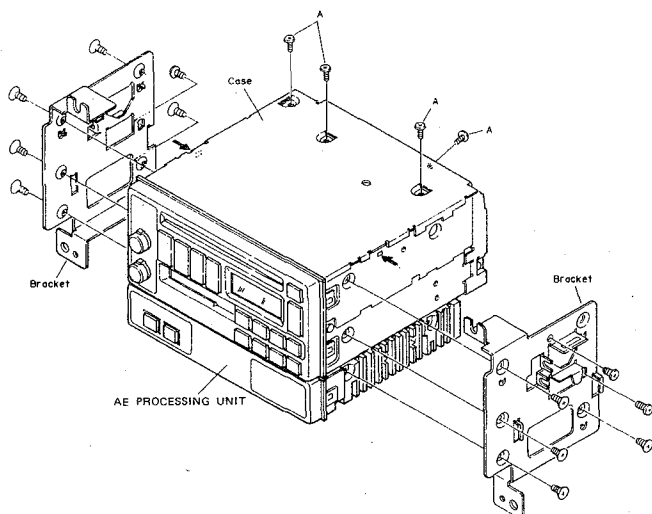


Fig. 5

#### • Removing the Tuner Assy

1. Remove the two screws.
2. Disconnect the two connectors, and remove the tuner assay.

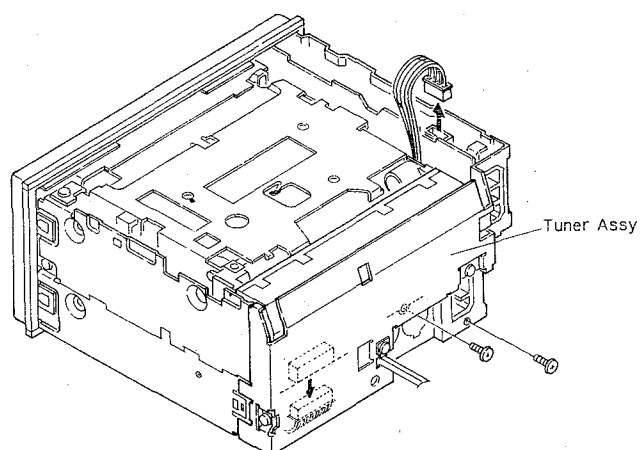


Fig. 6

- **Removing the IF · MPX P.C.Board**
  1. Remove the two screws, and remove the case.
  2. Remove solders at two locations indicated by arrows, and remove screw.
  3. Disconnect the two connectors, and raise the IF · MPX p.c.board to remove from FE · AM p.c.board.

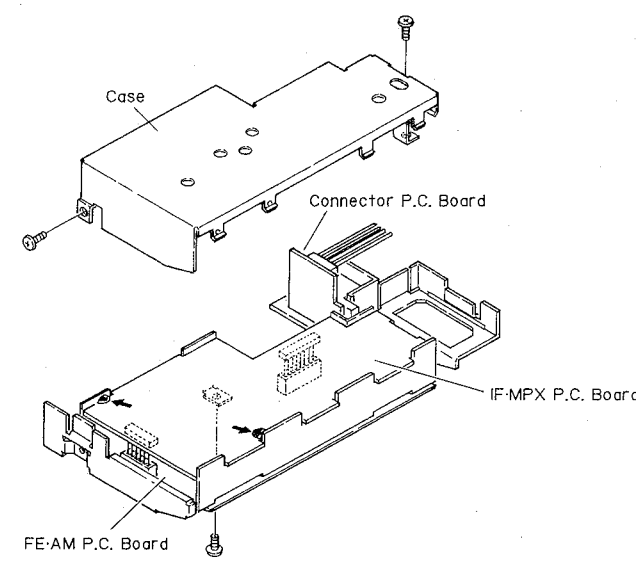


Fig. 7

- **Removing the Grille Assy**
  1. Remove the four knobs.
  2. Disengage the four claws indicated by arrows.
  3. Disconnect the two connectors, and remove the grille assy.

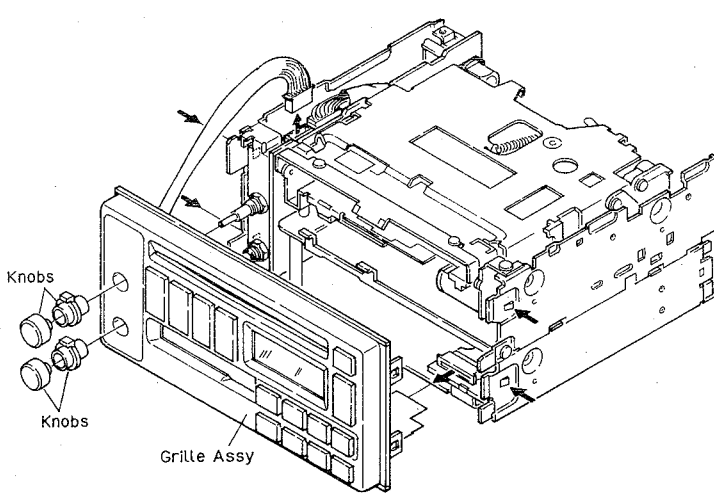


Fig. 8

- **Removing the CD Assy**
  1. Remove the three screws.
  2. Disconnect the two connectors, and remove the CD assy.

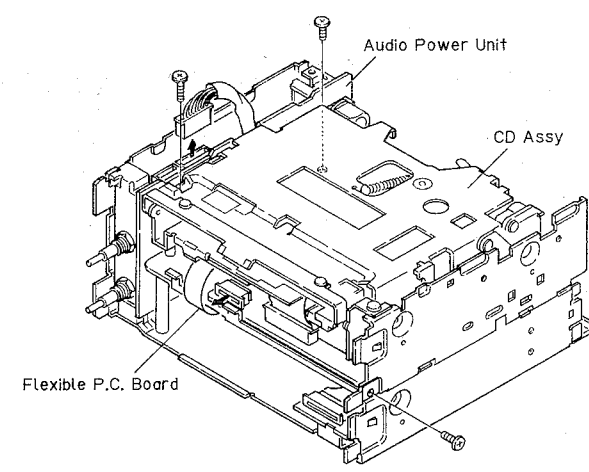


Fig. 9

- **Removing the CD Mechanism Unit**
  1. Remove the three screws.
  2. Disconnect the two connectors, and remove the CD mechanism unit.

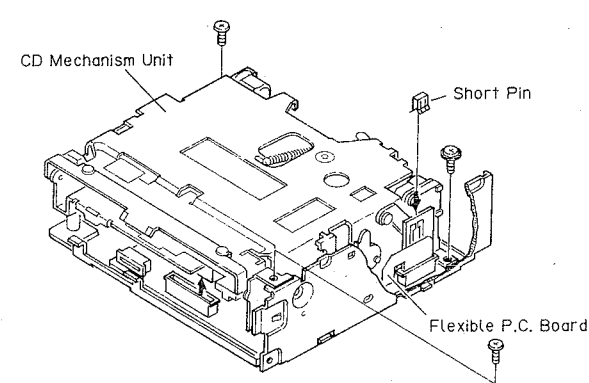


Fig. 10

NOTE: When remove the flexible p.c.board, always insert a shorting pin or insert an inter-pattern short (jumper) before disconnecting the board from the connector.

- **Removing the Cassette Mechanism Assy**
  1. Remove the two screws, and remove the cover.
  2. Disconnect the two connectors.
  3. Remove the four screws, and remove the cassette mechanism assy.

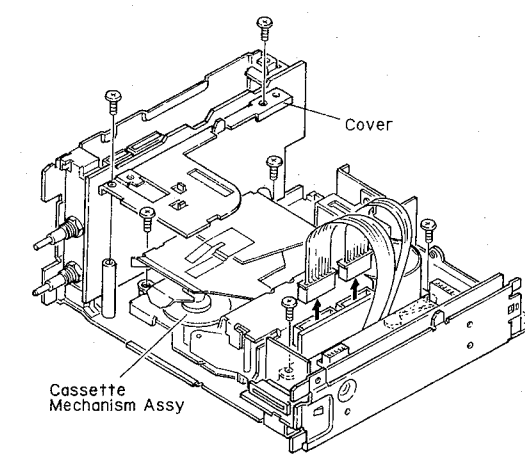


Fig. 11

- **Removing the Audio Power Unit (Fig. 12)**
  1. Remove the three screws.
  2. Disconnect the connector, and raise the audio power unit to remove from control p.c.board.

- **Removing the P.C.Board (Fig. 12)**
  1. Disconnect the connector, and raise the p.c.board to remove from control p.c.board.

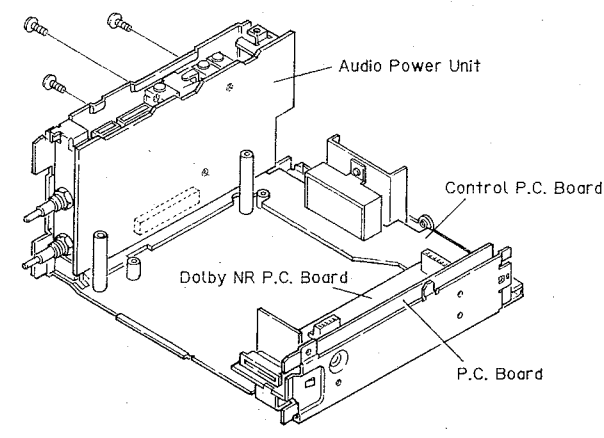


Fig. 12

- **Removing the Dolby NR P.C.Board (Fig. 12)**
  1. Disconnect the connector, and raise the dolby NR p.c.board to remove from control p.c.board.

5. BLOCK DIAGRAM

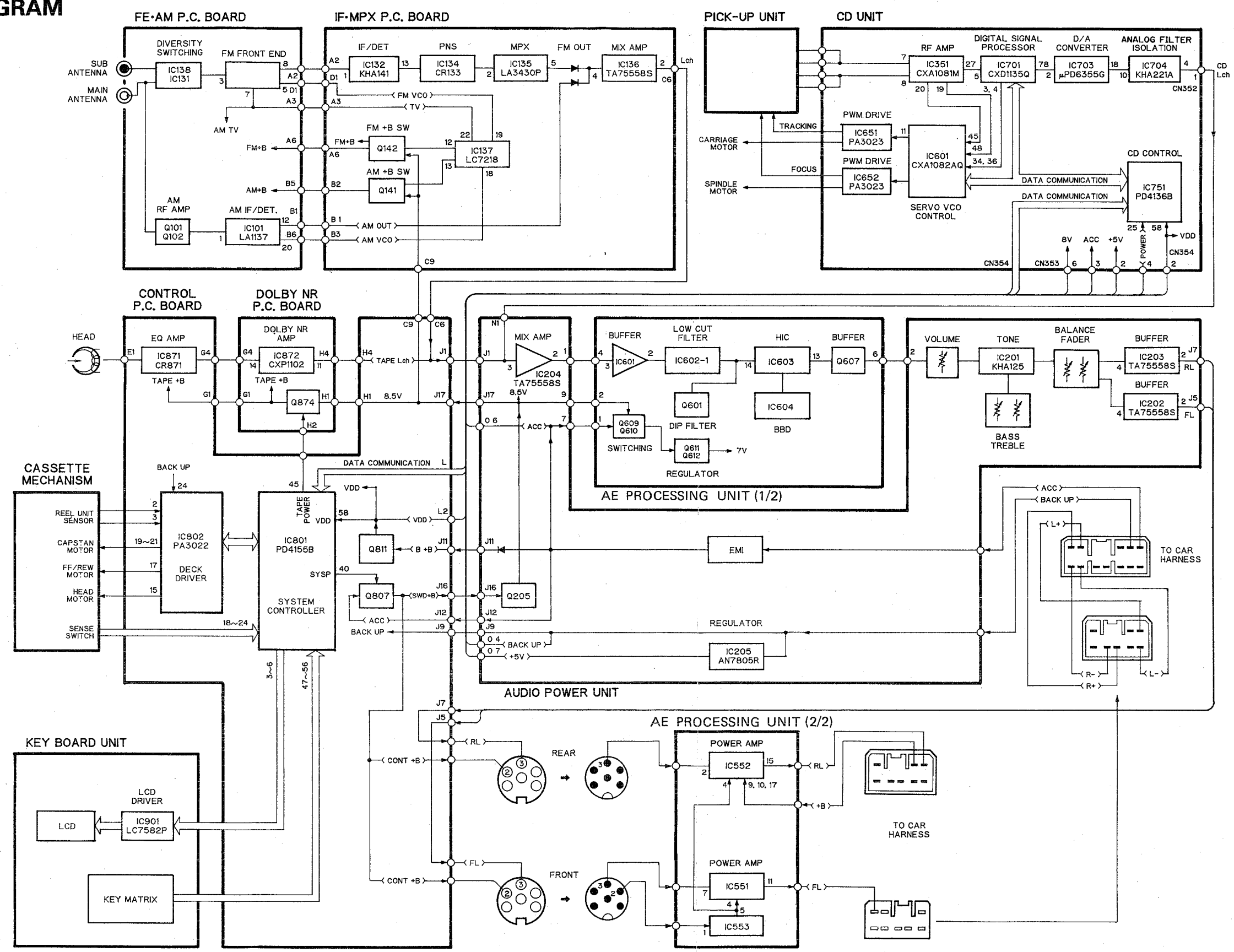


Fig. 13

## 6. ADJUSTMENT

### • Connection Diagram

#### NOTICE:

Select C1 so that total capacity of 80pF attained from the direction of the receiver jack.

Z: Output impedance of SSG.

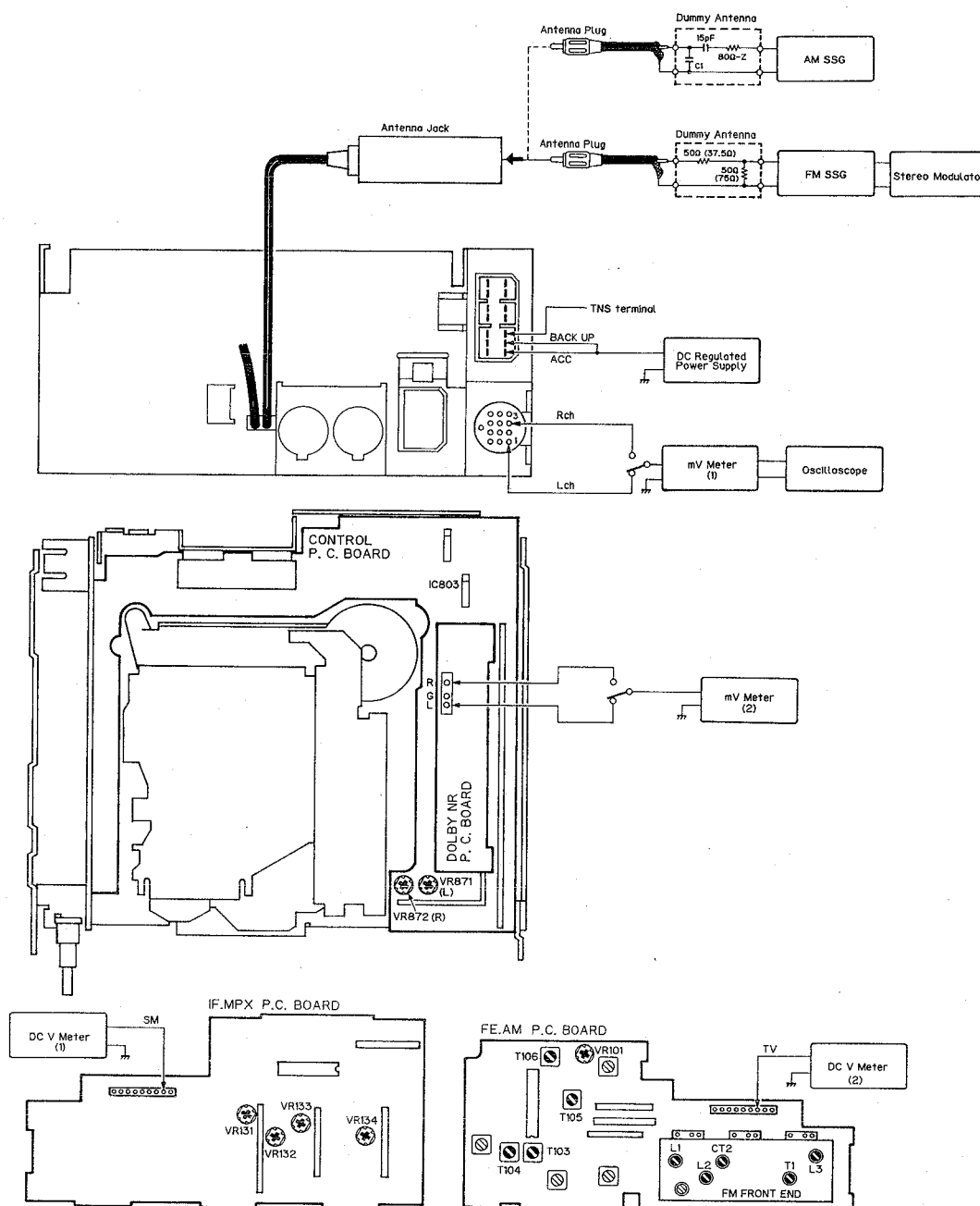


Fig. 14

### DOLBY NR LEVEL ADJUSTMENT

No.	Cassette Tape	Adjusting Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz, 200nwb/m)	VR871 (Lch), VR872 (Rch)	mV Meter (2): $-10 \pm 1\text{dB}$ (DOLBY NR Switch: OFF)

**AM ADJUSTMENT**

	No.	AM SSG(400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level dB ( $\mu$ V)			
IF	1	600	25	600	T103,104 105,106	mV Meter(1):Maximum
Tuning Volt	1			1,710	—	DC V meter(2):Less than 7.5V
	2			530	—	DC V meter(2):More than 0.8V
Stop sensitivity	1	1,000	38	1,000	VR101	Scanning stop
	2	1,000	38 $\pm$ 10	1,000	—	Verify that the scanning stop
	3	(LOC Mode)				TNS terminal $\rightarrow$ 13.2V
	4	1,000	63 $\pm$ 10	1,000	—	Verify that the scanning stop

**FM ADJUSTMENT**      ※ Stereo MOD.: 1kHz, L+R = 30%

	No.	FM SSG(400Hz, 30%)		Displayed Frequency (MHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (MHz)	Level dB ( $\mu$ V)			
IF	1	98.1	10	98.1	T1	mV Meter(1):Maximum
	2	98.1	60	98.1	VR131	DC V Meter(1):2.5V
Tracking	1			107.9	L3	DC V Meter(2):7.0 $\pm$ 0.1V
	2			87.9	—	DC V Meter(2):More than 1.4V
	3	89.9	10	89.9	L1, L2	mV Meter(1):Maximum
	4	106.1	10	106.1	CT2	mV Meter(1):Maximum
	5	Repeat items (3) and (4) alternately so that the mV meter(1) indicates maximum output				
MPX	1	98.1※	60	98.1	VR133	mV Meter(1):Best separation
	2	98.1※	35	98.1	VR134	mV Meter(1):Separation 5dB
Stop sensitivity	1	98.1	32	98.1	VR132	Scanning stop
	2	98.1	32 $\pm$ 8	98.1	—	Verify that the scanning stop

## CD ADJUSTMENT

### 1) Precautions

- CD section uses a single power supply (+5V) of the regulator. The signal reference potential, therefore, is connected to pin no. 14 (approx. 2.5V) of IC351 (CXA-1081M) instead of GND (VC at test point).

If VC and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.

Do not connect the negative probe of the measuring equipment to VC and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to VC with the channel 2 negative probe connected to GND.

And since the frame of the measuring instruments is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.

If by accident VC comes in contact with GND, immediately switch the regulator or power OFF.

- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.
- Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.

- Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and/or electrical shocks to the system when making adjustments.

- Test mode starting procedure

Turn ACC and Back-up ON while pressing the 1/RAN and 3 keys together.

- Test mode cancelation

Turn ACC and Back-up OFF and then back ON.

- Disc detection during loading and eject operations is performed by means of a photo transistor in this unit. Consequently, if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment, the following malfunctions may occur.

- During PLAY, even if the eject button is pressed, the disc will not be ejected and the unit will remain in the PLAY mode.

- The unit will not load a disc.

When the unit malfunctions this way, either re-position the light source, move the unit or cover the photo transistor.

### 2) Adjustment Point

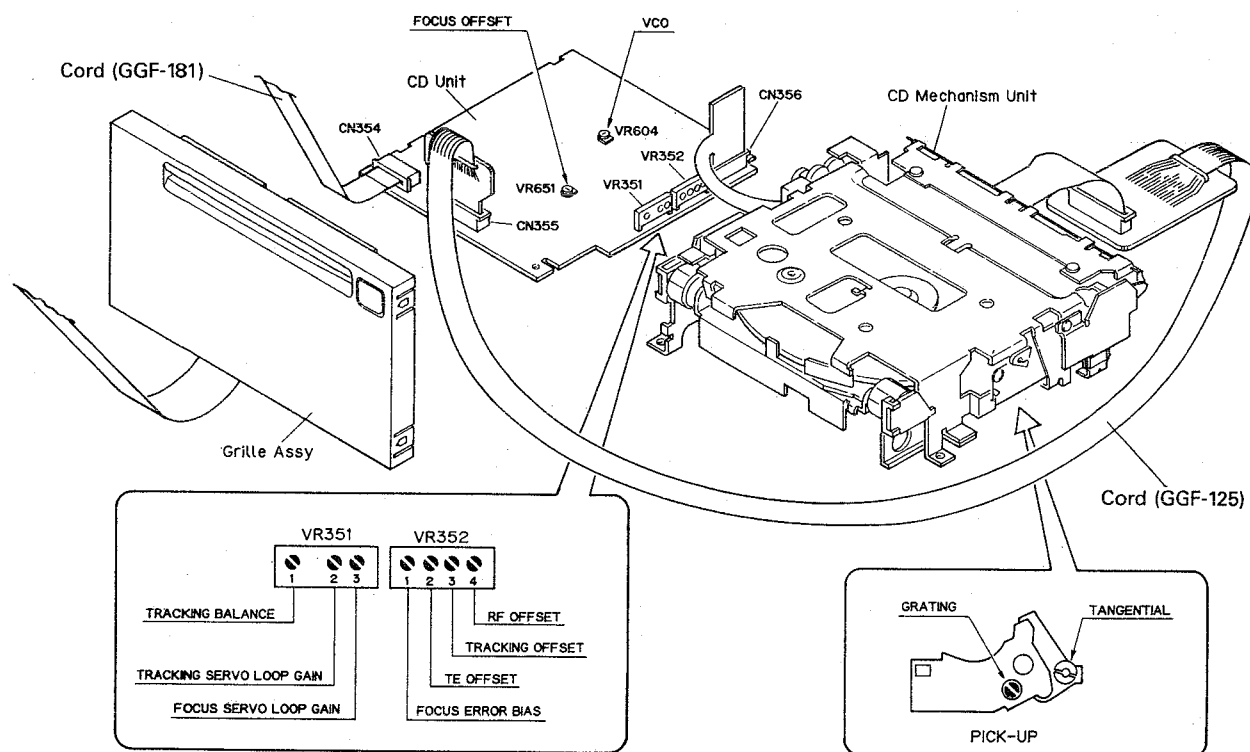


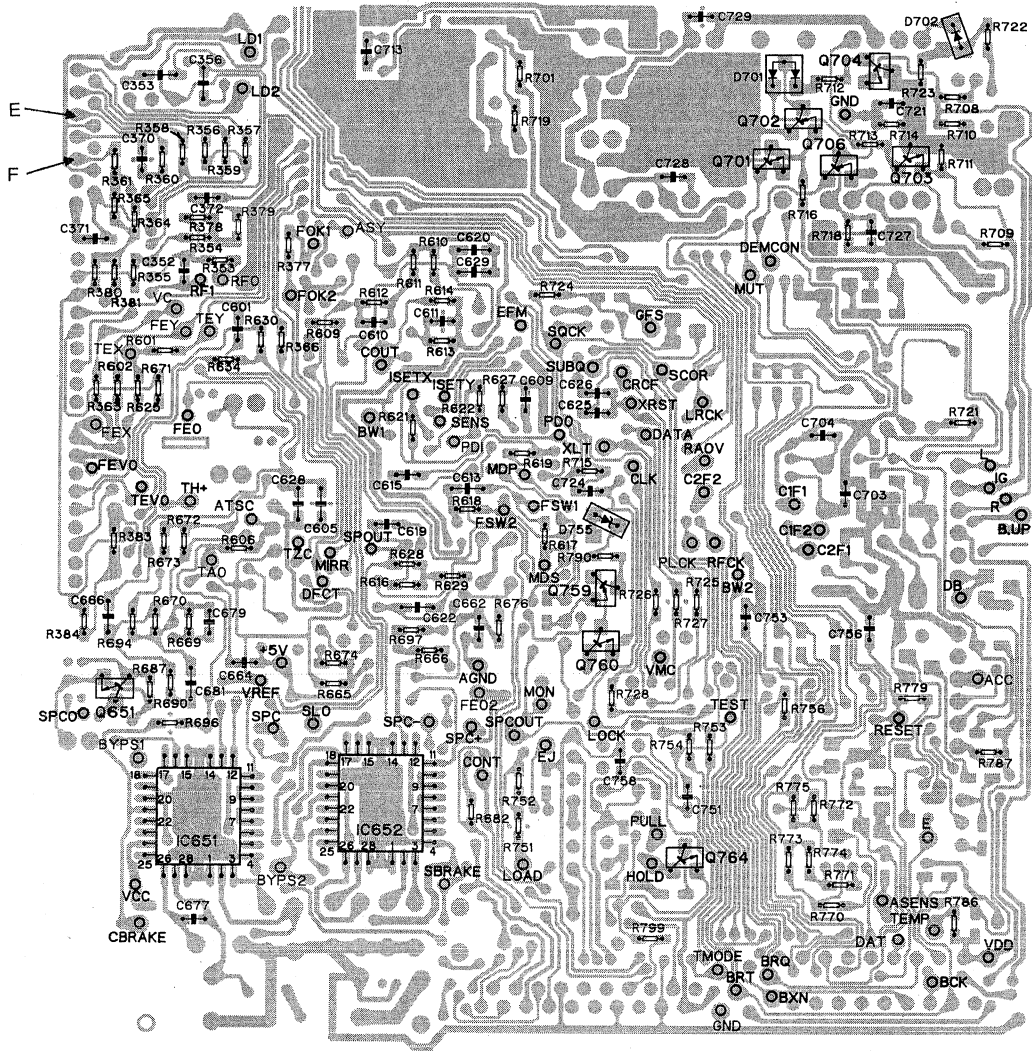
Fig. 15





- **Test point**

## CD UNIT



**Fig. 17**

## 6.1 Focus Offset Adjustment

- Purpose: To adjust the electrical offset of the focus amplifier to zero.
- Maladjustment symptoms: No focus closing

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>● Measuring equipment/<br/>jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>● Multi-meter or oscilloscope</li> <li>● FEO2</li> <li>● No disc, test mode</li> <li>● VR651</li> </ul> |
|--|--|

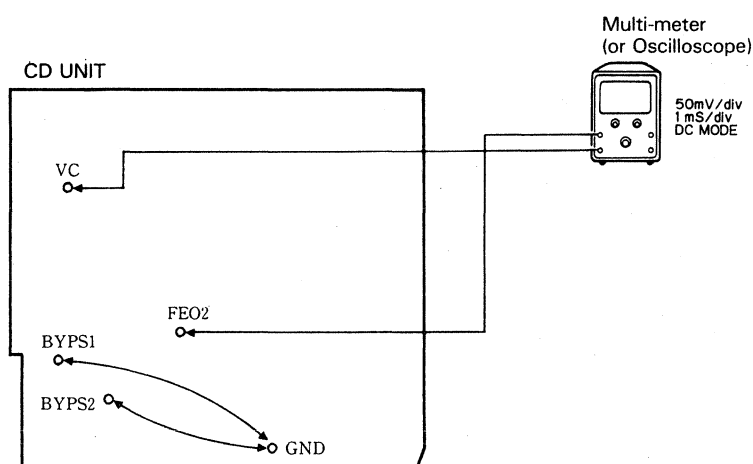


Fig. 18

### Adjustment Procedure

1. Connect BYPS 1 and BYPS 2 to GND.
2. Switch regulator ON.
3. Using VR651, adjust the FEO2 DC voltage in reference to VC to a value of  $0 \pm 25\text{mV}$ .

## 6.2 VCO Free Run Frequency Adjustment

- Purpose: To adjust the EFM decoder reference clock free-run frequency to a suitable value
- Maladjustment symptoms: Spindle lock not possible, distorted sound or no sound at all

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>● Measuring equipment/jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>● Frequency counter, extension cables</li> <li>● Pin no.70 (PLCK) of IC701 (CXD1135Q)</li> <li>● No disc</li> <li>● Test mode</li> <li>● VR604</li> </ul> |
|---|--|

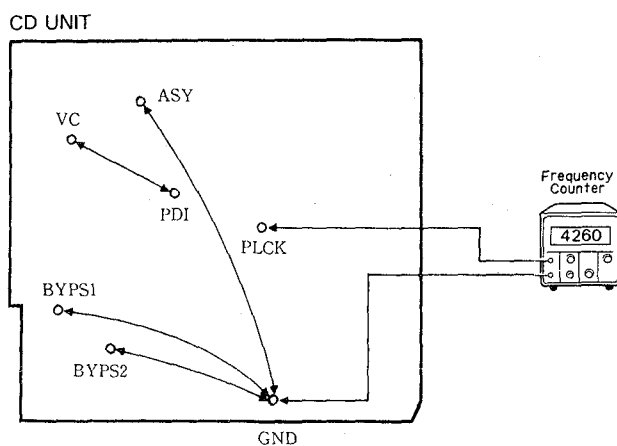


Fig. 19

### Adjustment Procedure

1. Connect pin no.26 (TP ASY) of IC351 to GND.  
Connect BYPS 1 and BYPS 2 to GND.
2. Connect pin no.1 (TP VC) of IC601 to pin no.28 (TP PDI).
3. Switch regulator ON while in test mode.
4. Connect the frequency counter to pin no.70 (TP PLCK) of IC701 (CXD1135Q).
5. Adjust VR604 to obtain a frequency of  $4.26 \pm 0.005\text{MHz}$ .
6. Switch regulator OFF.
7. Disconnect the leads connecting TP VC to TP PDI, and TP ASY to GND.

Note: Connect TP VC and TP PDI with leads kept as short as possible.

Note: Connect the frequency counter ground to TP GND as shown in the figure.

### 6.3 RF Offset Adjustment

- Purpose: To adjust the RF amplifier offset to a suitable value
- Maladjustment symptoms: Focus closure fails readily

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>● Measuring equipment/<br/>jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>● Oscilloscope</li> <li>● RFO</li> <li>● No disc</li> <li>● VR352-4 (RFO)</li> <li>● Test mode</li> </ul> |
|--|--|

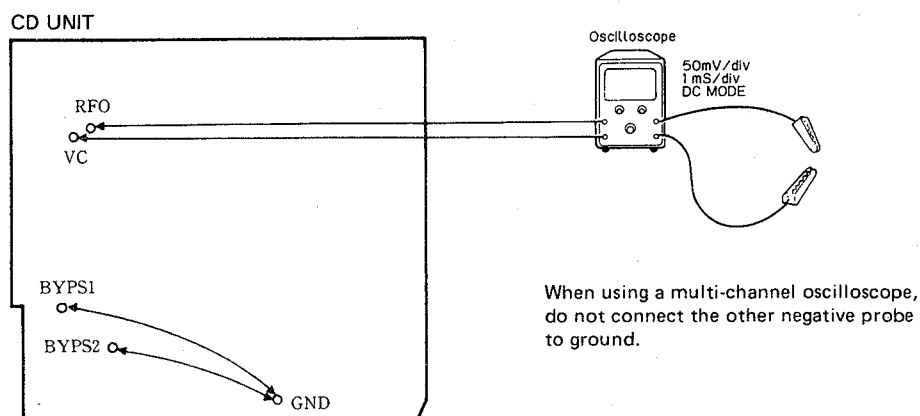


Fig. 20

#### Adjustment Procedure

1. Connect BYPS 1 and BYPS 2 to GND.
2. Switch regulator ON.
3. Using the oscilloscope, measure the RFO DC voltage in reference to VC, and adjust VR352-4 (RFO) to obtain a reading of  $+250 \pm 25\text{mV}$ .

## 6.4 Tracking Offset Adjustment

- Purpose: To adjust the electrical offset of the tracking amplifier to zero
- Maladjustment symptoms: Search times too long, carriage run-away

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>● Measuring equipment/<br/>jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>● Oscilloscope</li> <li>● TAO low-pass filter output</li> <li>● No disc      ● Test mode</li> <li>● VR352-3 (TO)</li> </ul> |
|--|--|

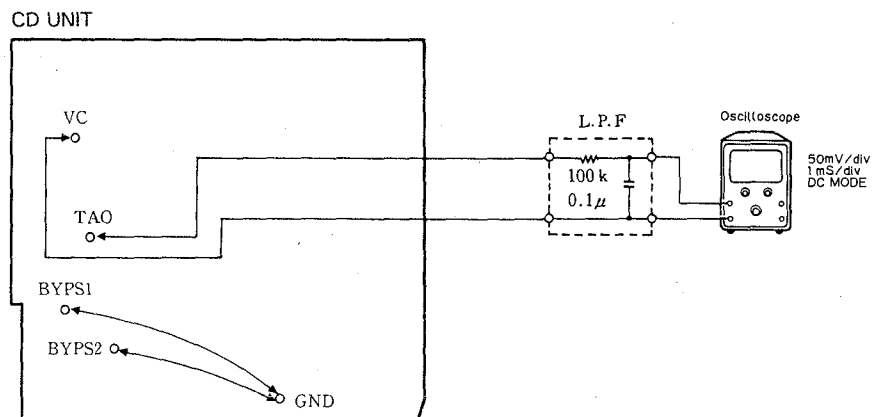


Fig. 21

### Adjustment Procedure

1. Insert a low-pass filter between TAO and VC.
  2. Check that BYPS 1 and BYPS 2 are connected to GND.
  3. Switch regulator ON.
  4. Using the oscilloscope, measure the TAO LPF output DC voltage in reference to VC, and adjust VR352-3 (TO) to obtain a reading of  $0 \pm 25\text{mV}$ .
- The low-pass filter may be left in place for later adjustments.

## 6.5 TE Offset Adjustment - I

- Purpose: To adjust the electrical offset of the tracking servo to zero.
- Maladjustment symptoms: Search times too long, carriage run-away

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>● Measuring equipment/<br/>jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>● DC voltmeter</li> <li>● TAO low-pass filter output</li> <li>● No disc      • Test mode</li> <li>● VR352-2 (TEO)</li> </ul> |
|--|---|

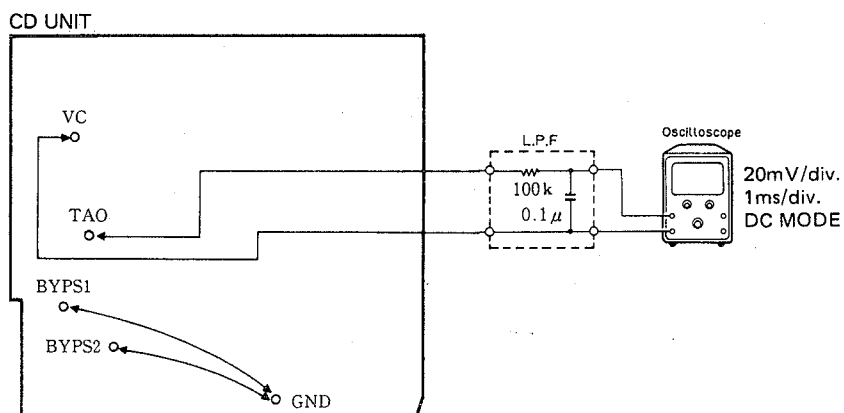


Fig. 22

**Adjustment Procedure**

1. Check that BYPS 1 and BYPS 2 are connected to GND.
2. Switch regulator ON while in test mode.
3. Press the **1/RAN** key to close tracking.
4. Using VR352-2 (TEO), adjust the TAO LPF output DC voltage in reference to VC to a value of  $0 \pm 10\text{mV}$ .
5. Switch regulator OFF.

## 6.6 Tracking Balance Adjustment - I

- Purpose: To adjust the tracking servo offset to zero.
- Maladjustment symptoms: Search times too long, poor playability, carriage run-away

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>● Measuring equipment/jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>● Oscilloscope</li> <li>● TEY (Tracking error signal), low-pass filter output</li> <li>● SONY TYPE 4 (or TYPE 3) • Test mode</li> <li>● VR351-1 (T. BAL)</li> </ul> |
|---|--|

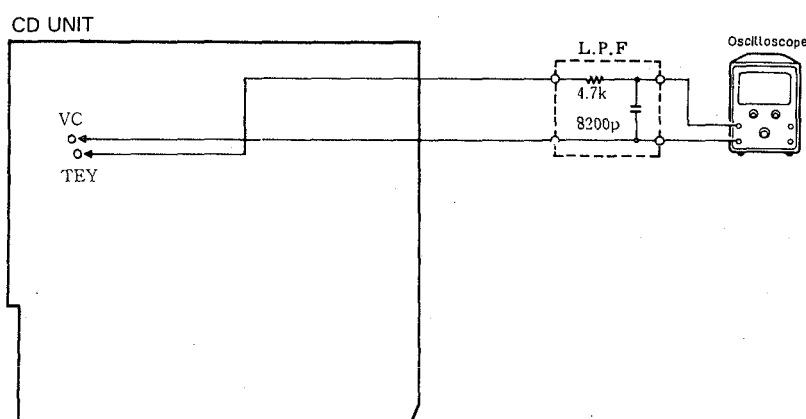
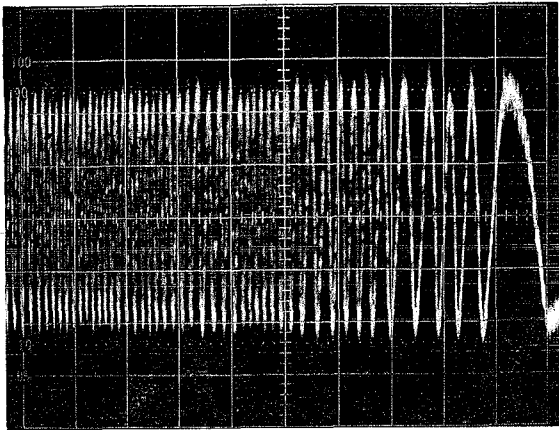


Fig. 23

### Adjustment Procedure

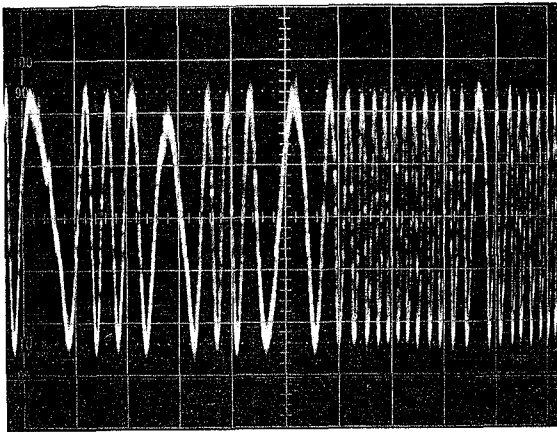
1. After checking that regulator is OFF, connect the low-pass filter as shown in the diagram.
2. Disconnect BYPS 1 and BYPS 2 from ground.
3. Set the test disc (SONY TYPE 4) in magazine tray 6 and load the magazine. Switch regulator ON.
4. Using the **FF/UP** or **DOWN/REW** key, move the pick-up to about the center of the signal surface.
5. Press the **2/RPT** key to close focus.
6. Using an oscilloscope, observe the TEY signal in respect to VC. Then adjust VR351-1 (T. BAL) to set the positive and negative amplitudes to the same levels. (See Fig. 24-26)
7. Switch the power OFF.

The low-pass filter may be left in place for later adjustments.



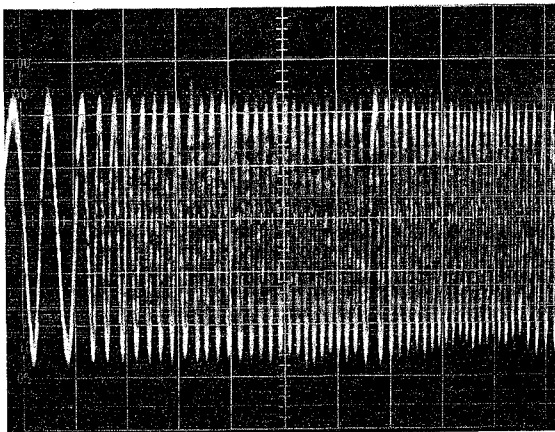
+5% NG

Fig. 24



±0% OK

Fig. 25



-5% NG

Fig. 26

10ms/div.  
0.2V/div.  
DC Mode



## 6.7 Tangential Skew Check

- Purpose: To check whether tangential skew has been misaligned or not when replacing the pick-up unit.
- Maladjustment symptoms: No disc playback; track jumping

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>● Measuring equipment/jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>● Oscilloscope, extension connectors, screwdriver</li> <li>● RFO</li> <li>● SONY TYPE 4 (or TYPE 3) • Normal mode</li> <li>● Pick-up tangential adjustment screw</li> </ul> |
|---|--|

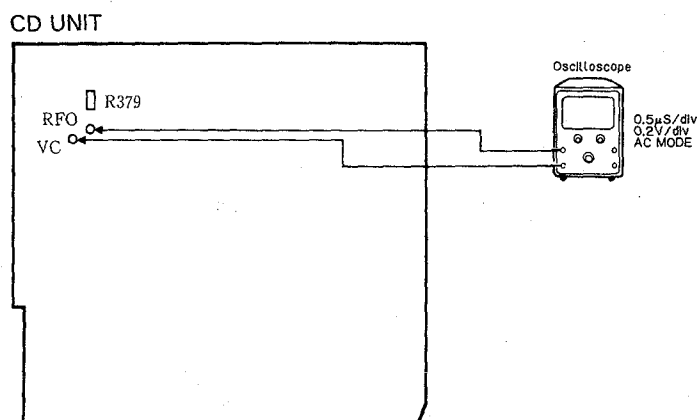
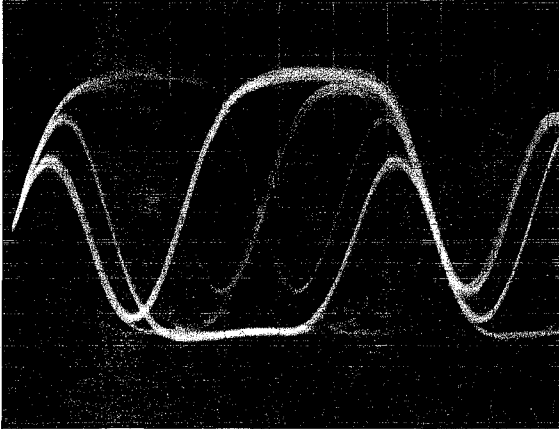


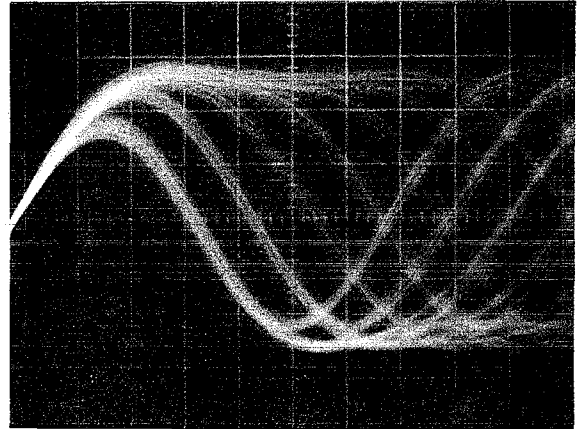
Fig. 27

### Adjustment Procedure (with R379 removed)

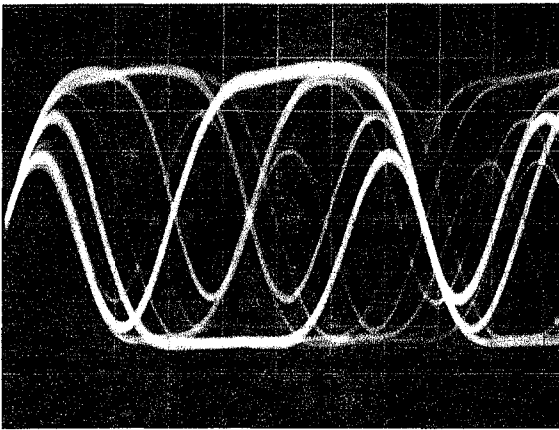
1. Remove R379 (but reconnect after completing adjustment).
2. Play tune TNO 7 in normal mode. (TYPE 3: TNO 23)
3. Check that the valley at the 11T section of the RF waveform is flat.
4. If out of adjustment, readjust to obtain a flat RF waveform. (See Fig. 28—33) Take care not to knock the pick-up with the screwdriver at this stage. (This kind of accident can result in loss of focus.)
5. Switch the power OFF and reconnect R379.
6. Apply "screw-lock" to the tangential adjustment screw.
7. After adjusting tangential skew, also adjust the grating.
8. If tangential skew is seriously out of adjustment, carriage stopping and run-away tend to occur in normal mode. In this case,
  - a) Switch to test mode,
  - b) Shift the pick-up to signal surface center using **FF/UP** or **DOWN/REW** key.
  - c) Press the **2/RPT** key to close focus.
  - d) Press the **1/RAN** key to close the tracking.
- e) Observe RFO in respect to VC, and turn the tangential adjustment screw to obtain a flat waveform at the 11T section.
- f) Repeat the adjustment resuming from step 2.



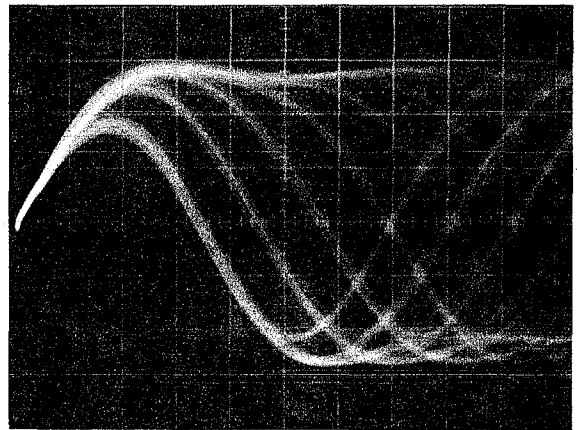
NG Fig. 28



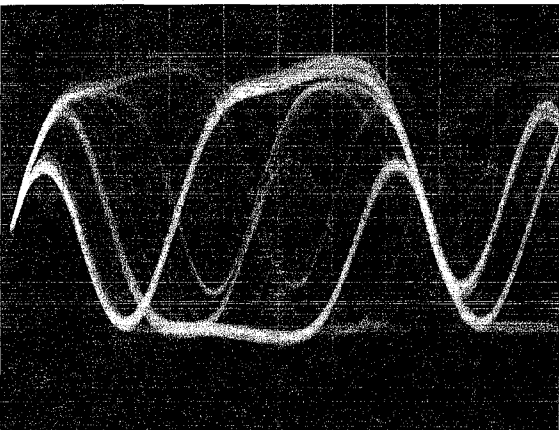
NG Fig. 29



OK Fig. 30

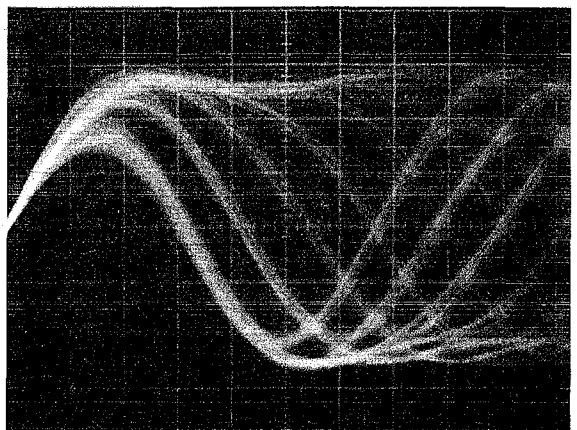


OK Fig. 31



NG Fig. 32

Play tune TNO 7 (TYPE4)

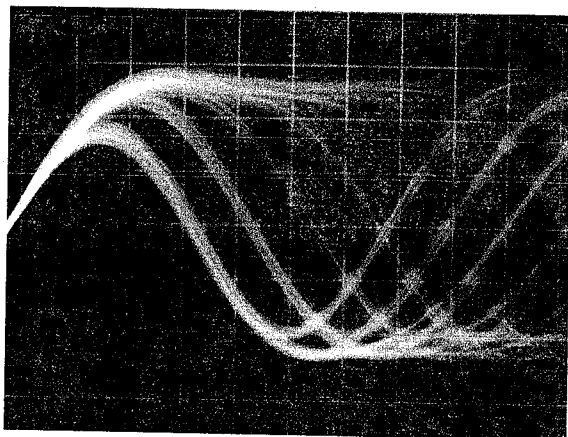


NG Fig. 33

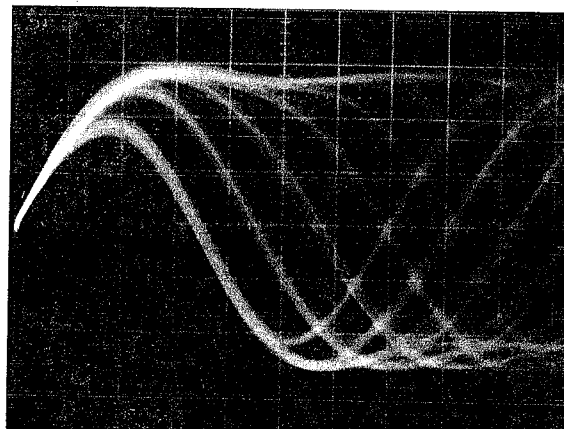
Play tune TNO 12 (TYPE4)

**Adjustment Procedure (without R379 removed)**

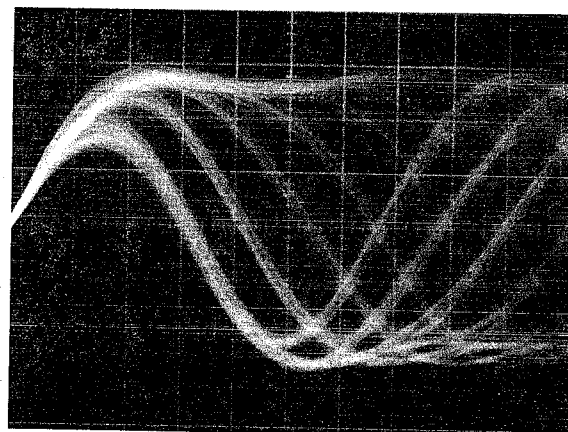
1. Play tune TNO 12 in normal mode. (TYPE 3: TNO 14)
2. Turn the tangential adjustment screw to obtain a good RF waveform eye pattern. Turn the adjustment screw both clockwise and counterclockwise to points where the eye pattern deteriorates, and take the midway point as the adjustment point. As a general guide, look for an overall clear waveform, and one of the diamond shapes in the eye pattern. The diamond shapes should appear in fine lines at the point of optimum adjustment. Take care not to knock the pick-up with the screwdriver at this stage. (This kind of accident can result in loss of focus.) (See Fig. 34—36)



NG Fig. 34



OK Fig. 35



NG Fig. 36

## 6.8 Grating Adjustment

- Purpose: The grating may need adjustment in a replaced pick-up assembly.
- Maladjustment symptoms: No disc playback; track jumping

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>● Measuring equipment/ jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>● Oscilloscope, clock driver, grating adjustment filter (bandpass filter), AC millivoltmeter, two low-pass filters</li> <li>● TEY, E LPF output, F LPF output</li> <li>● SONY TYPE 4 (or TYPE 3) • Test mode</li> <li>● Pick-up grating adjustment hole</li> </ul> |
|--|---|

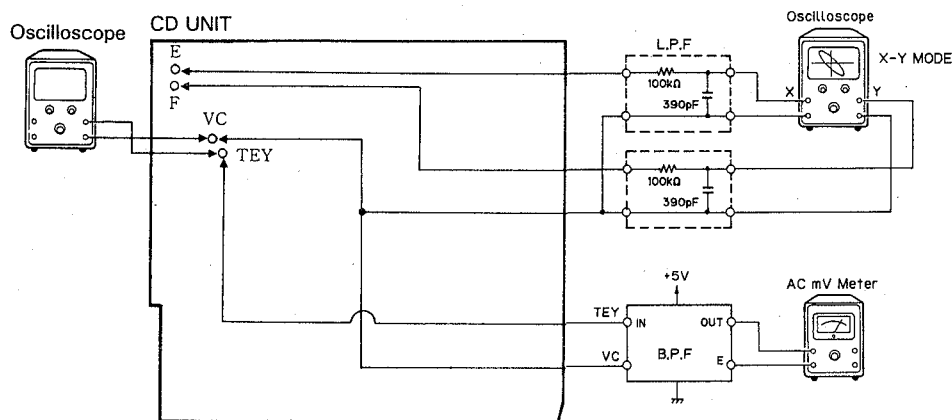


Fig. 37

### Adjustment Procedure

1. Connect a low-pass filter (100k, 390p) to test points E, F, and VC as shown in the above diagram.
2. Switch regulator ON in test mode, and load a disc.
3. Press the **2/RPT** key to close focus.
4. Press the **1/RAN** key to close tracking.
5. Press the **FF/UP** or **DOWN/REW** key, move the pick-up to about the center of the signal surface (tune TNO 6). (TYPE 3: TNO 7)
6. Press the **SCAN** key to open tracking.
7. While monitoring the TEY filter output by AC milli-voltmeter, turn the grating adjustment hole slowly. The AC voltage increases and decreases while turning the screw. Search for the minimum voltage level. (This corresponds to the position where the grating is on a track, and is referred to as the null point.)
8. Then while monitoring TEY by oscilloscope, turn the driver slowly clockwise from the null point (as seen from under the lens) until the first waveform peak amplitude is reached. (See Fig. 39—44)

9. With the E low-pass filter output connected to the X axis of the oscilloscope, and the F low-pass filter output connected to the Y axis, apply an input in AC mode and observe the Lissajous figure.
10. Using the driver, adjust the Lissajous figure to a single line (or as close as possible).
11. Switch regulator OFF and remove the filters.

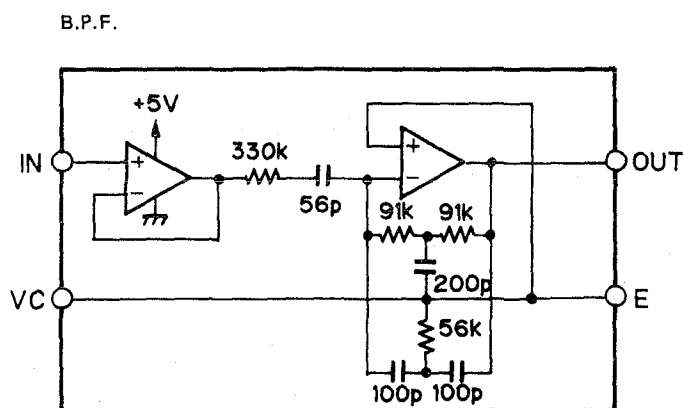


Fig. 38

TEY waveform 10ms/div, 500mV/div

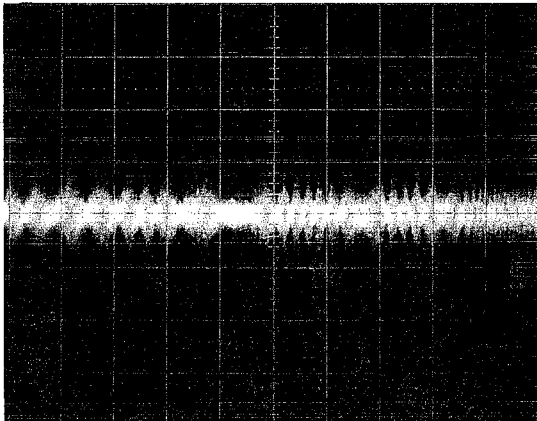


Fig. 39

Null Point

Lissajous figure (AC input)  
Horizontal axis E 20mV/div  
Vertical axis F 20mV/div

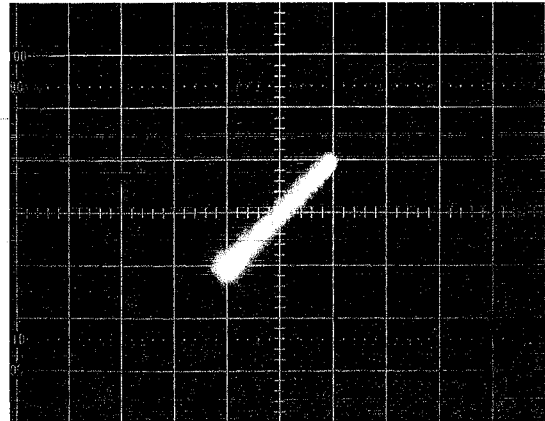


Fig. 40



"Rough" adjustment

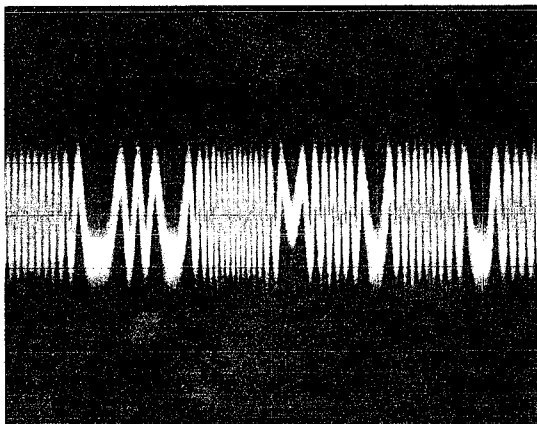


Fig. 41

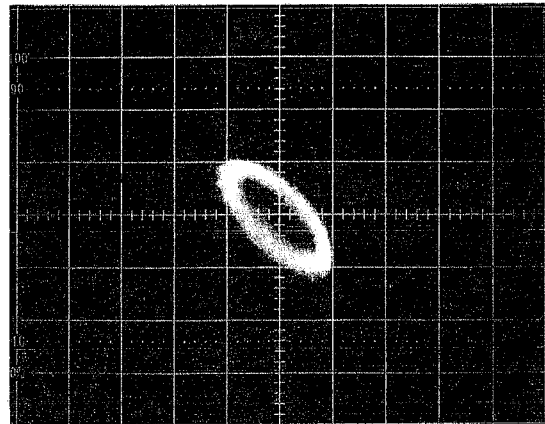


Fig. 42



Final adjustment

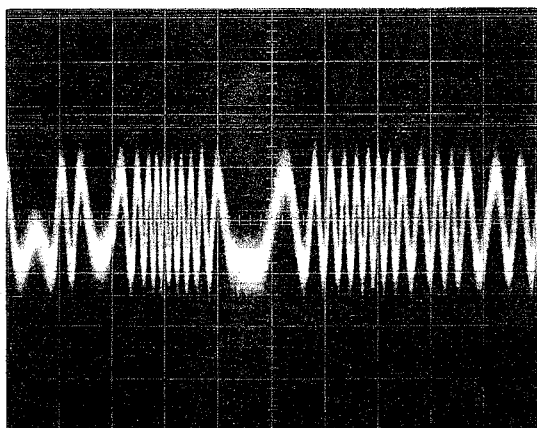


Fig. 43

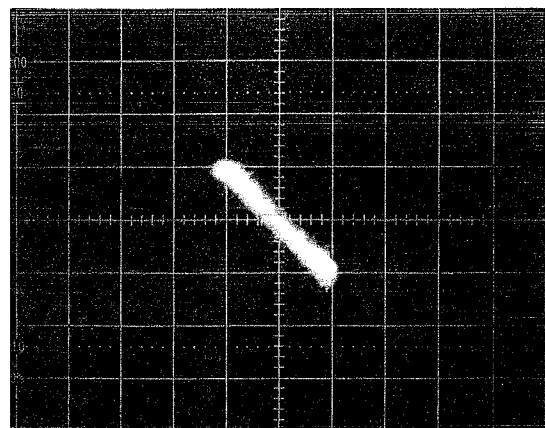


Fig. 44

## 6.9 Focus Bias Adjustment

- Purpose: To adjust the focus servo bias to an optimum value
- Maladjustment symptoms: Focus closing difficulty, poor playability

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>● Measuring equipment/jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>● Oscilloscope</li> <li>● RFO</li> <li>● SONY TYPE 4 (or TYPE 3) • Normal mode</li> <li>● VR352-1 (FEB)</li> </ul> |
|---|---|

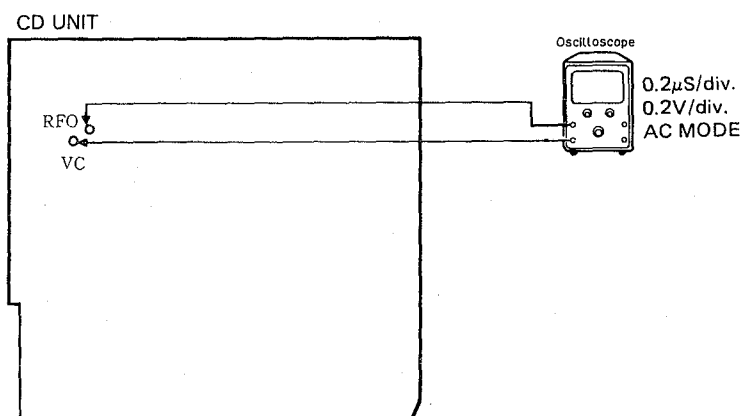
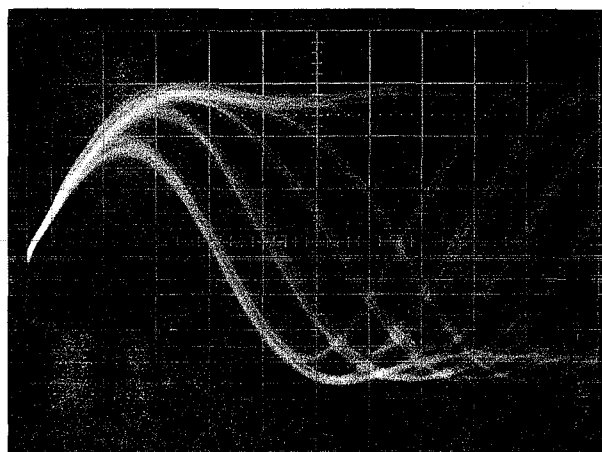


Fig. 45

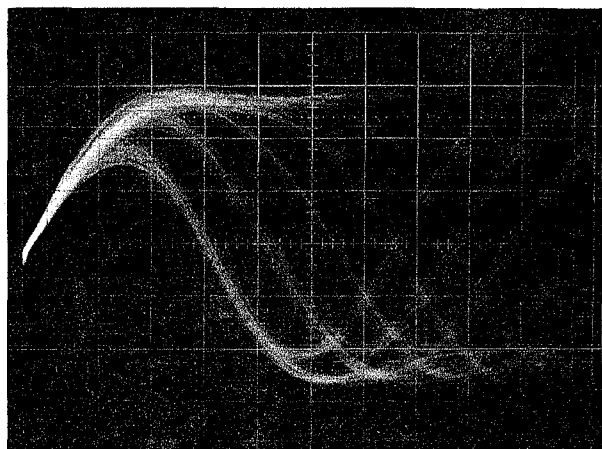
### Adjustment Procedure

1. Play tune TNO 12 in normal mode. (TYPE 3: TNO 14)
2. Observe RFO in respect to VC in the oscilloscope, and adjust VR352-1 (FEB) to obtain maximum RF and optimum eye pattern. (See Fig. 46 and 47)



OK

Fig. 46



0.2 $\mu$ s/div.  
0.2V/div.  
AC Mode

Before adjustment

Fig. 47



## 6.10 Focus Servo Loop Gain Adjustment

- Purpose: To adjust the focus servo loop gain to an optimum value
- Maladjustment symptoms: Poor playability, reduced resistance to vibration, focus closure fails readily

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>● Measuring equipment/jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>• Oscillator, gain adjustment filter, dual meter milli-voltmeter</li> <li>• FEX, FEY</li> <li>• SONY TYPE 4 (or TYPE 3) • Normal mode</li> <li>• VR351-3 (FG)</li> </ul> |
|---|---|

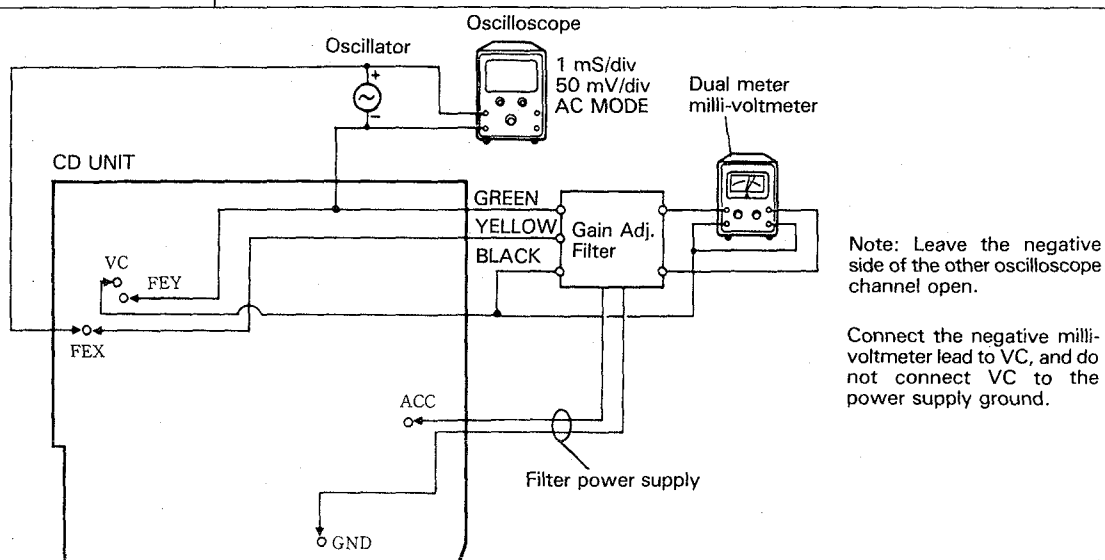


Fig. 48

### Adjustment Procedure

1. After checking that the power is OFF, connect the gain adjustment filter and measuring equipment as shown in the above diagram.
2. Play tune TNO 12 in normal mode. (TYPE 3: TNO 14)
3. Set the oscillator to 1kHz, and observe the FEX/FEY output in the oscilloscope. Adjust the oscillator output to obtain a FEX/FEY output of 200mVp-p.
4. Adjust VR351-3 (FG) to obtain a milli-voltmeter difference of  $0 \pm 0.5\text{dB}$ .

## 6.11 Tracking Servo Loop Gain Adjustment

- Purpose: To adjust the tracking servo loop gain to an optimum value
- Maladjustment symptoms: Poor playability, reduced resistance to vibration

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>● Measuring equipment/ jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>• Oscillator, gain adjustment filter, dual meter milli-voltmeter</li> <li>• TEX, TEY</li> <li>• SONY TYPE 4 (or TYPE 3) • Normal mode</li> <li>• VR351-2 (TG)</li> </ul> |
|--|---|

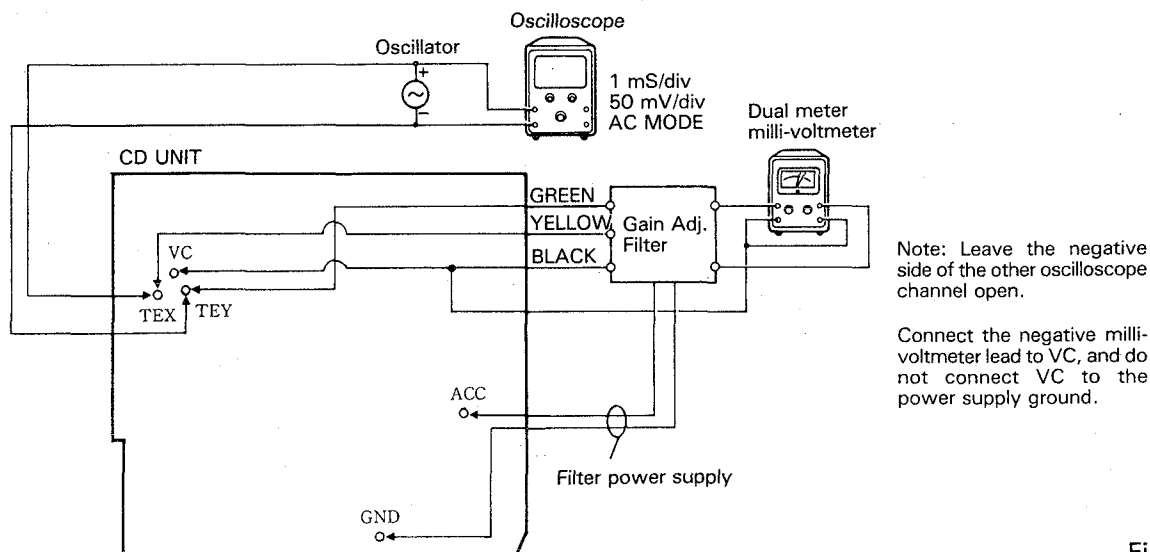


Fig. 49

### Adjustment Procedure

1. After checking that the power is OFF, connect the gain adjustment filter and measuring equipment as shown in the above diagram.
2. Play tune TNO 12 in normal mode. (TYPE 3: TNO 14)
3. Set the oscillator to 1.4kHz, and observe the TEX/TEY output in the oscilloscope. Adjust the oscillator output to obtain a TEX/TEY output of 200mVp-p.
4. Adjust VR351-2 (TG) to obtain a milli-voltmeter difference of  $0 \pm 0.5\text{dB}$ .

## 6.12 TE Offset Adjustment - II

- Purpose: To adjust the electrical offset of the tracking servo to zero.
- Maladjustment symptoms: Search times too long, carriage run-away

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>● Measuring equipment/<br/>jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>• DC voltmeter</li> <li>• TAO low-pass filter output</li> <li>• No disc      • Test mode</li> <li>• VR352-2</li> </ul> |
|--|---|

### Adjustment Procedure

Same as for TE offset adjustment - I, but with the DC voltage of the TAO LPF output adjusted to  $0 \pm 50\text{mV}$ .

The purpose of this additional adjustment is to correct any deviations generated when carrying out the tracking balance and tracking servo loop gain adjustments after completing TE offset adjustment - I.

### 6.13 Tracking Balance Adjustment - II

- Purpose: To adjust the tracking servo offset to zero.
- Maladjustment symptoms: Search times too long, poor playability, carriage run-away

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>● Measuring equipment/<br/>jigs</li> <li>● Measuring point</li> <li>● Test disc and setting</li> <li>● Adjustment position</li> </ul> | <ul style="list-style-type: none"> <li>● Oscilloscope</li> <li>● TEY low-pass filter output</li> <li>● SONY TYPE 4 (or TYPE 3) • Test mode</li> <li>● VR351-1</li> </ul> |
|--|--|

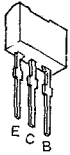
#### Adjustment Procedure

Steps 1 thru 5 same as tracking balance adjustment-I.

6. Check that the level difference between the positive and negative amplitudes of the TEY signal is within 5% (See Fig. 24—26). If greater than 5%, adjust with VR351-1.
7. If further adjustment was necessary in step 6, repeat TE offset adjustment - II.

# ICs and Transistors

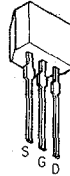
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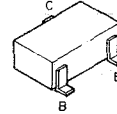
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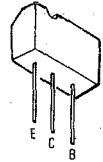
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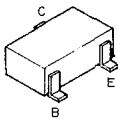
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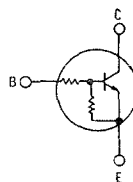
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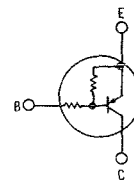
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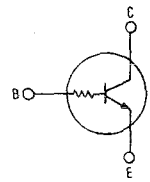
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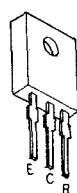
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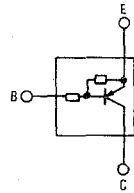
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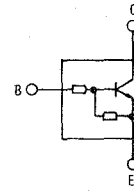
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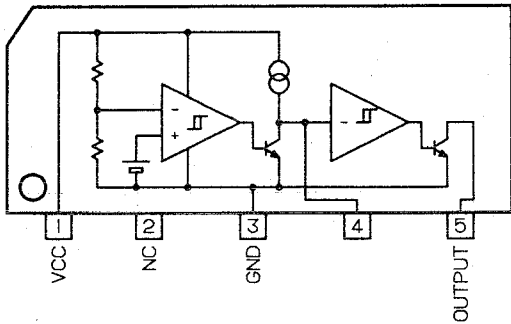
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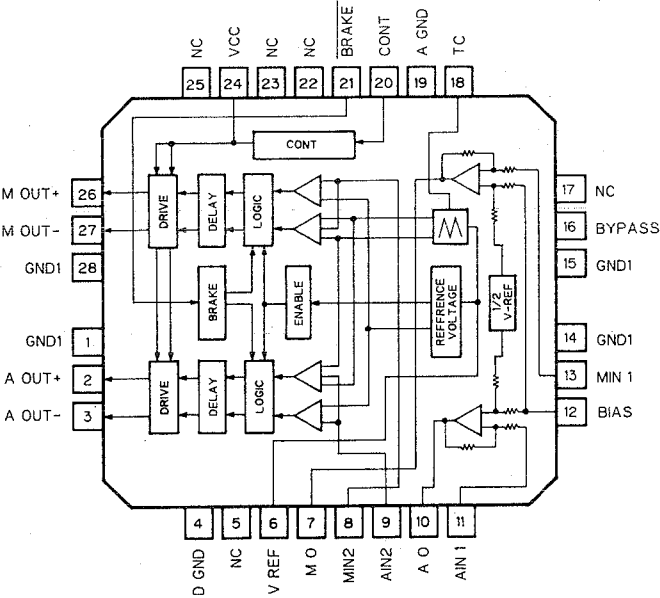
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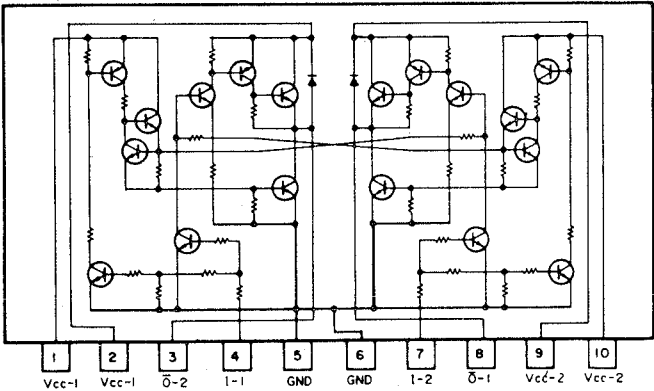
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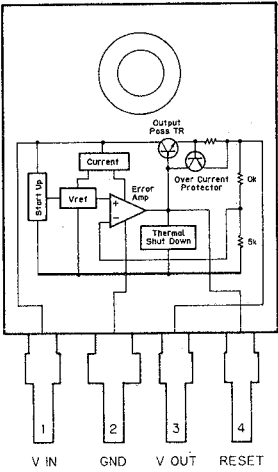
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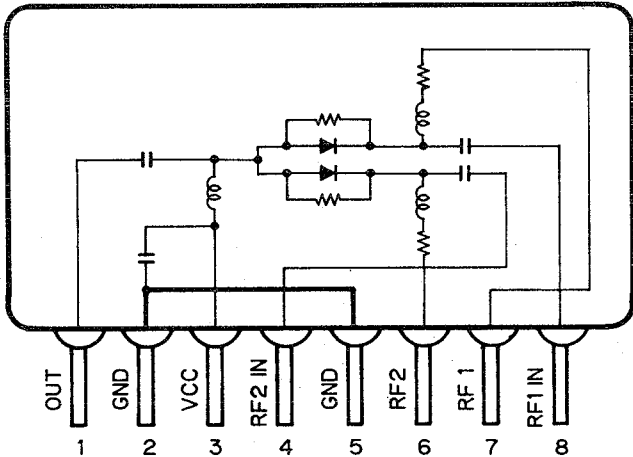
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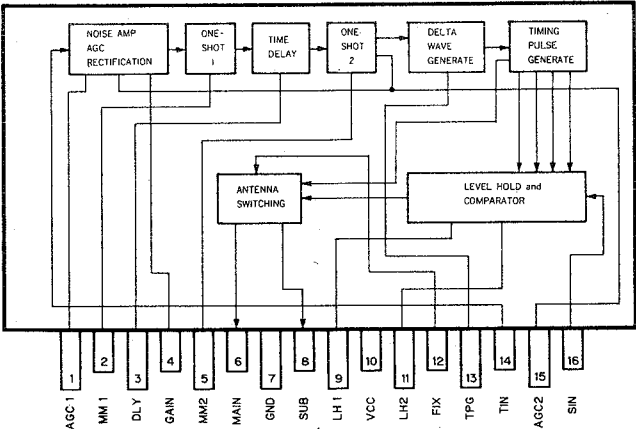
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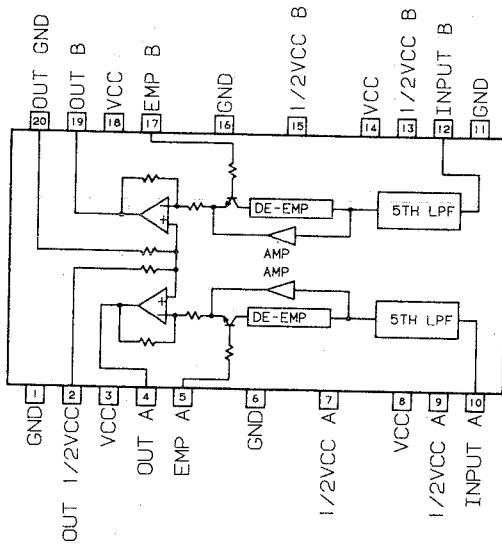
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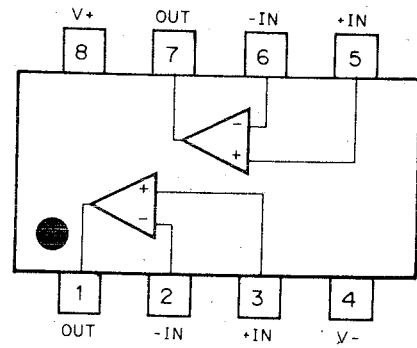
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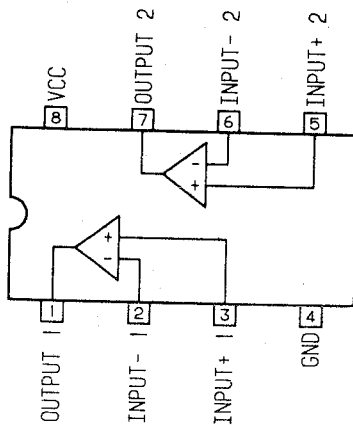
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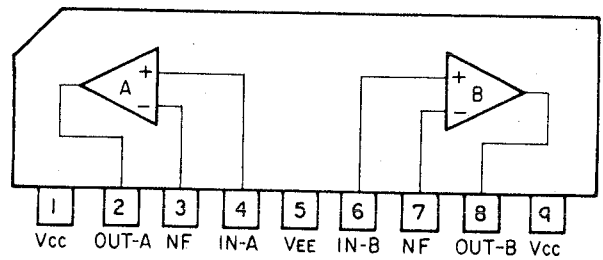
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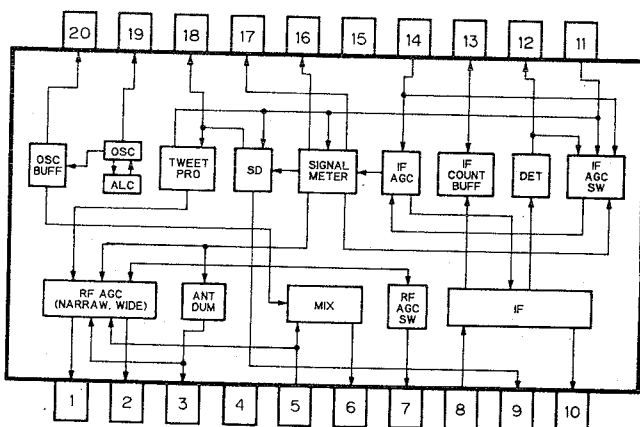
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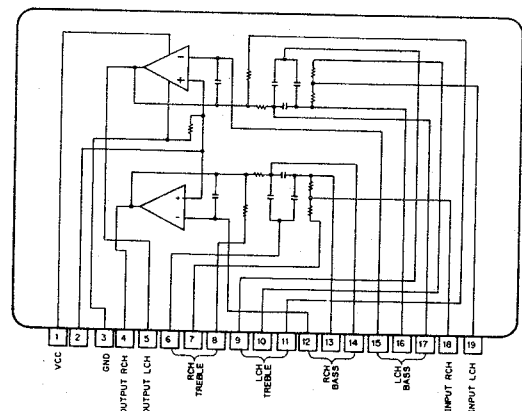
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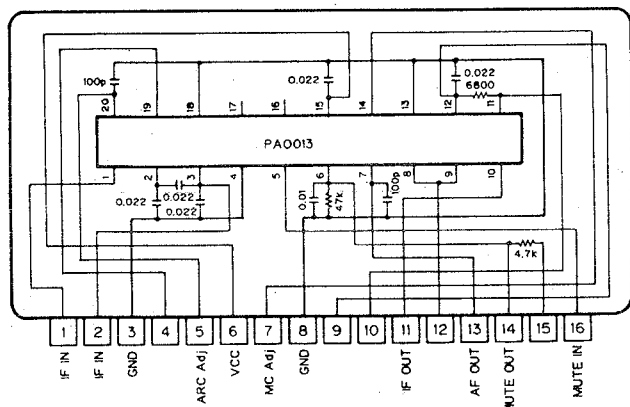
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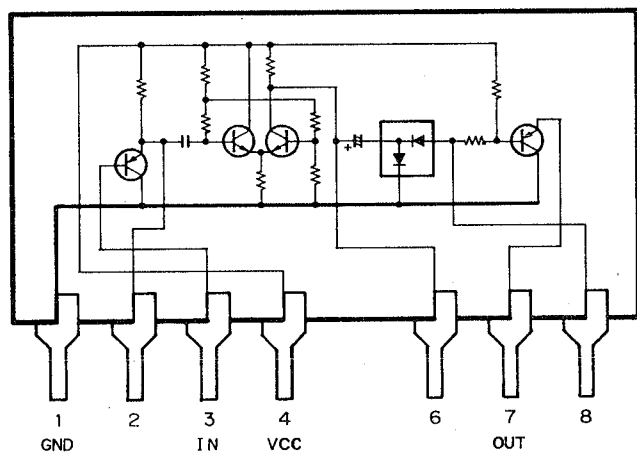
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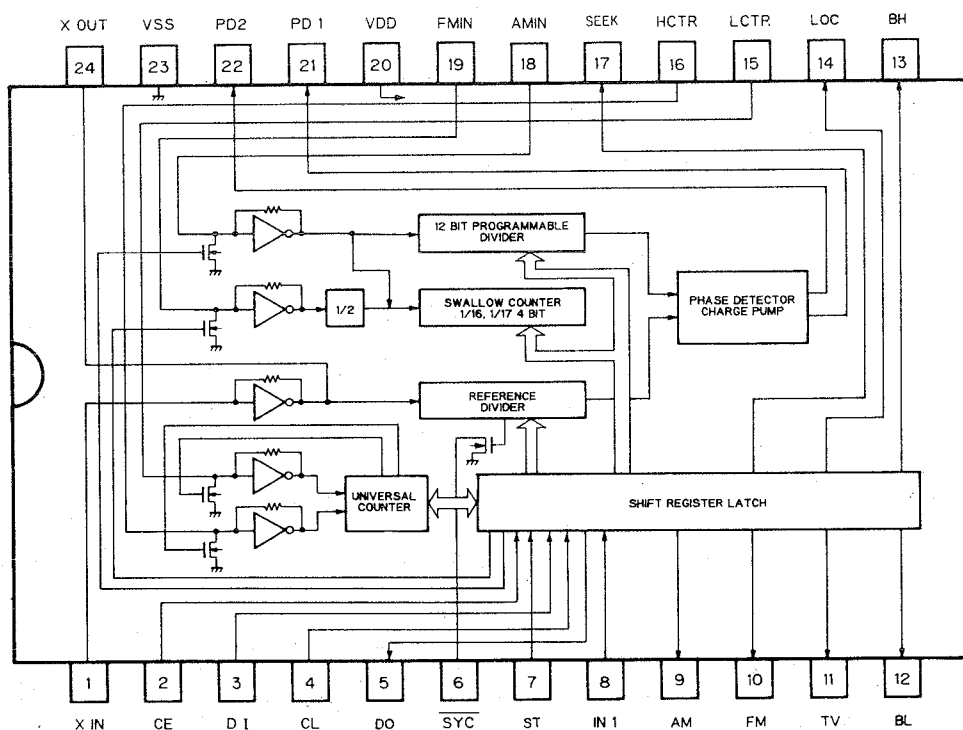
KHA141A



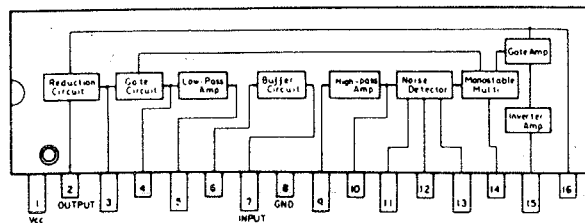
KHA505



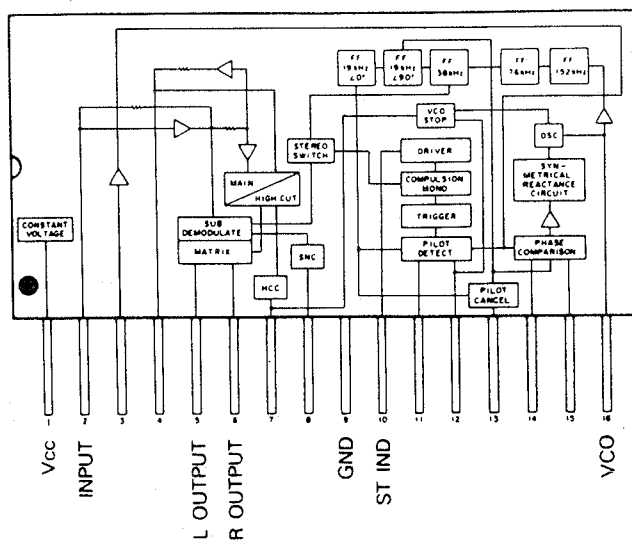
LC7218



LA2110

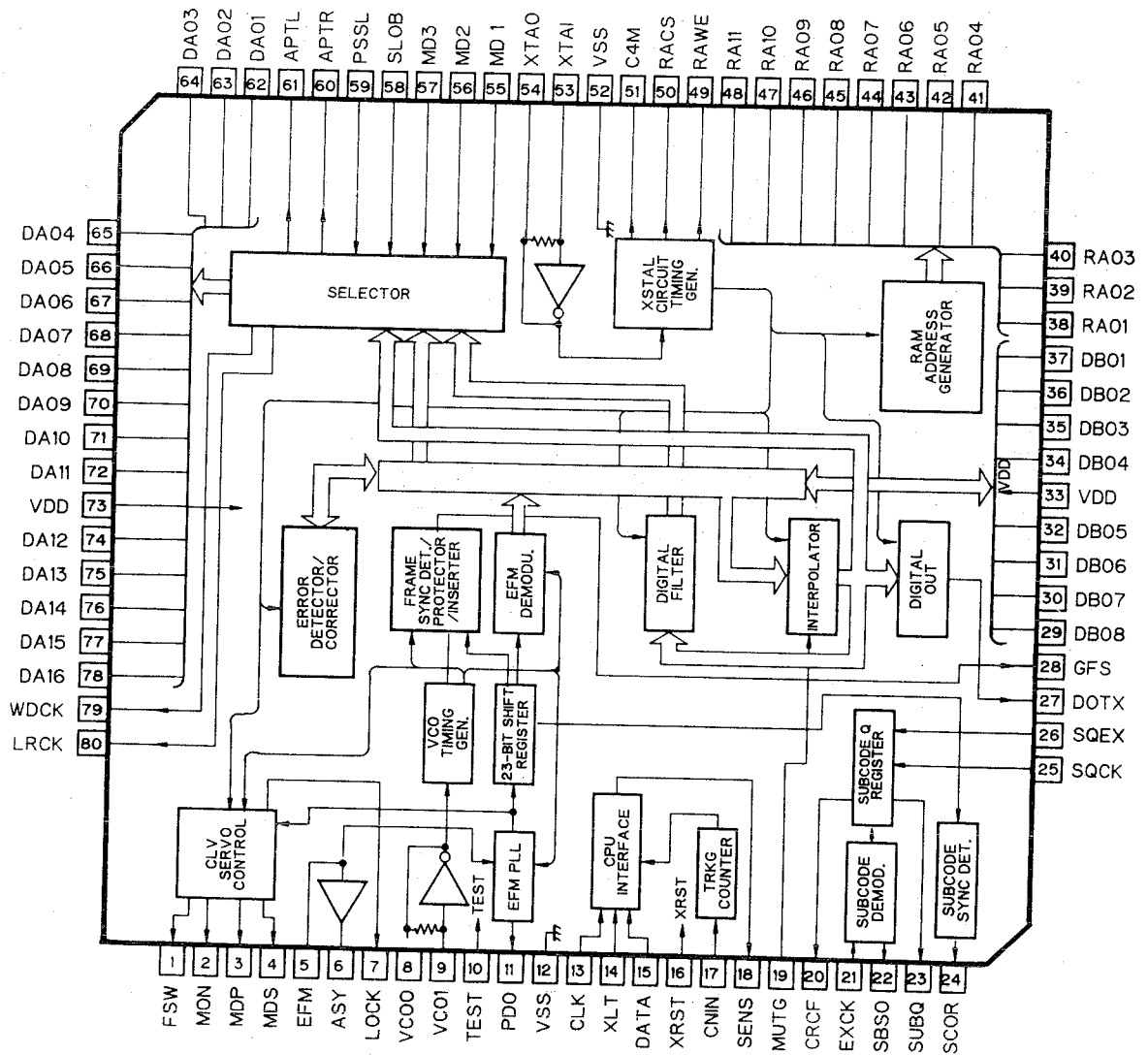


LA3430P

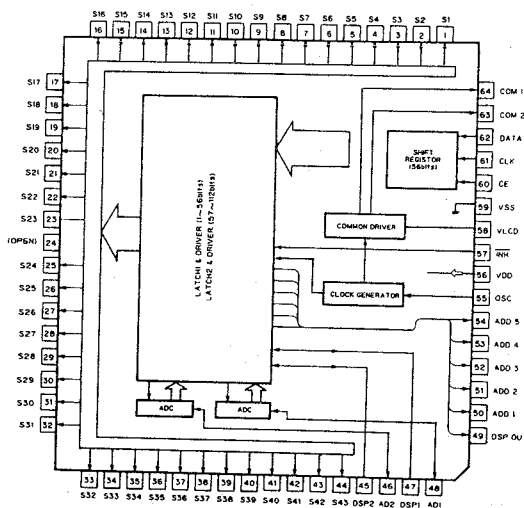




\*CXD1135Q

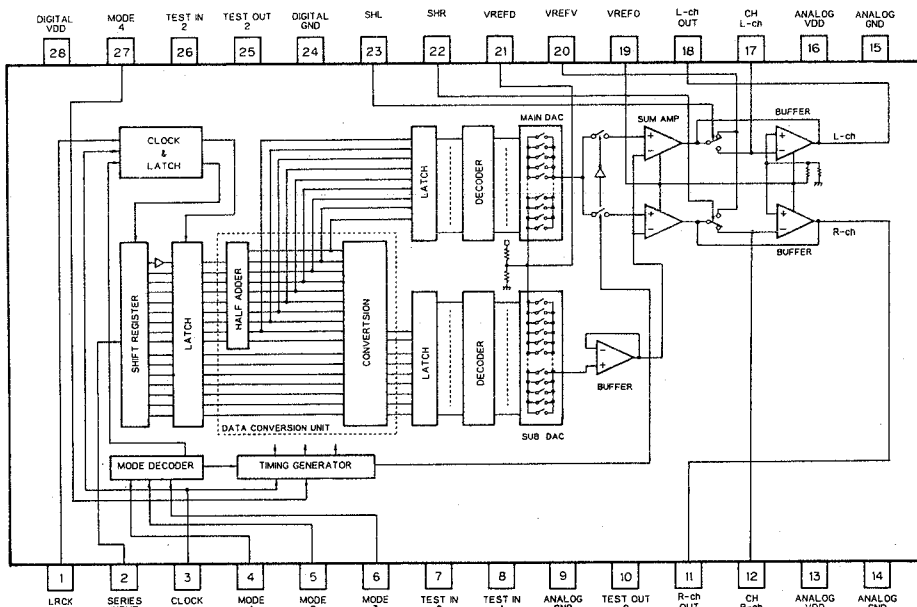


LC7582P

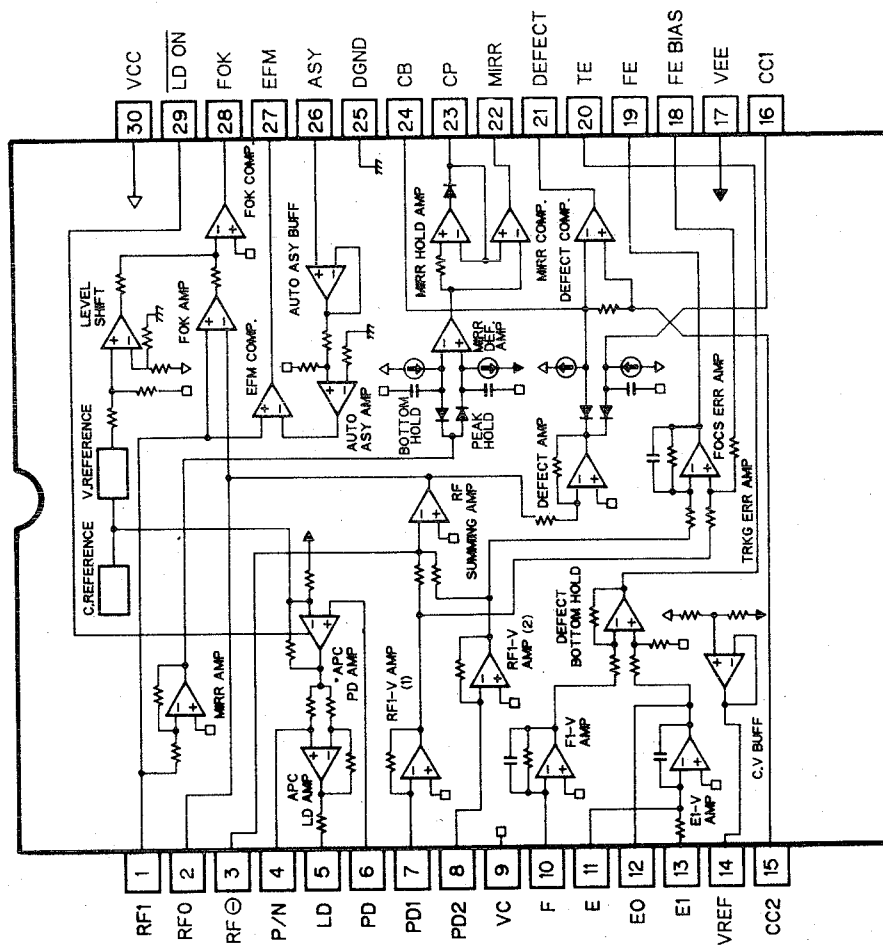


IC's marked by \* are MOS type.  
Be careful in handling them because they are very  
liable to be damaged by electrostatic induction.

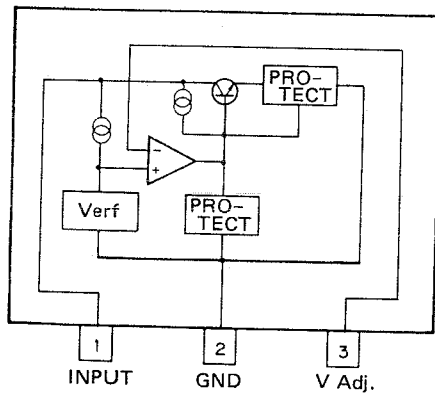
\* $\mu$ PD6355G



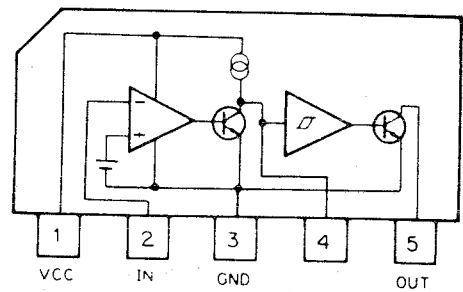
\*CXA1081M



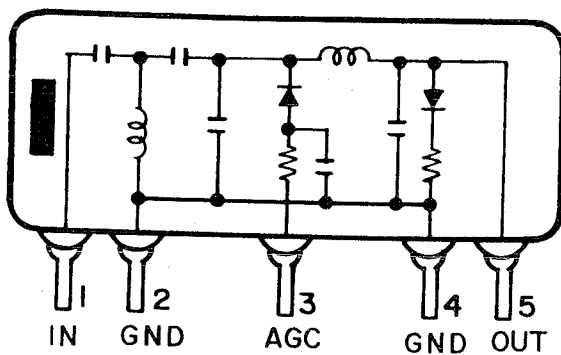
M5236L



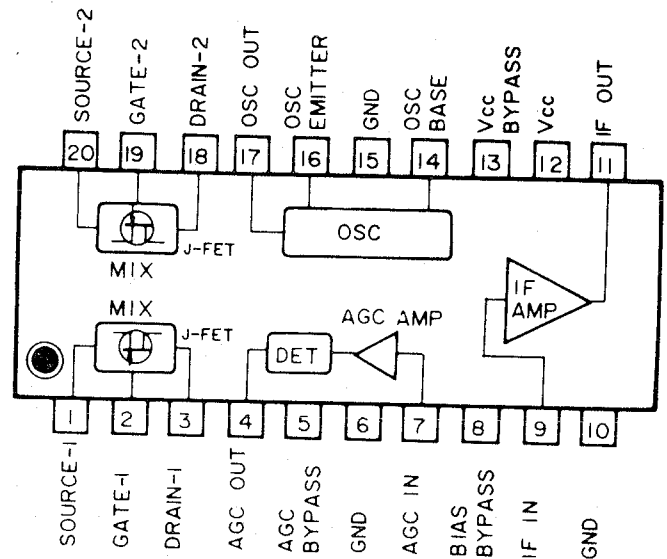
M51957BL



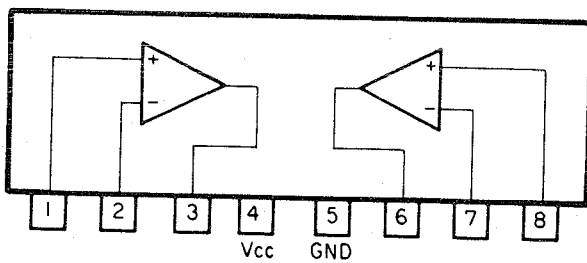
CWW1015



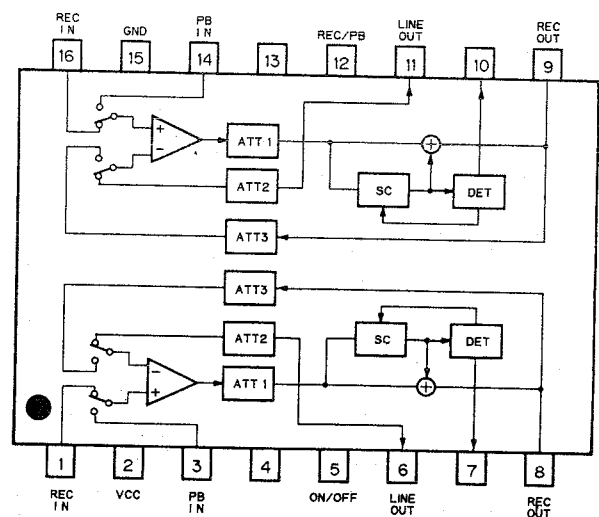
PA4009



M51522AL

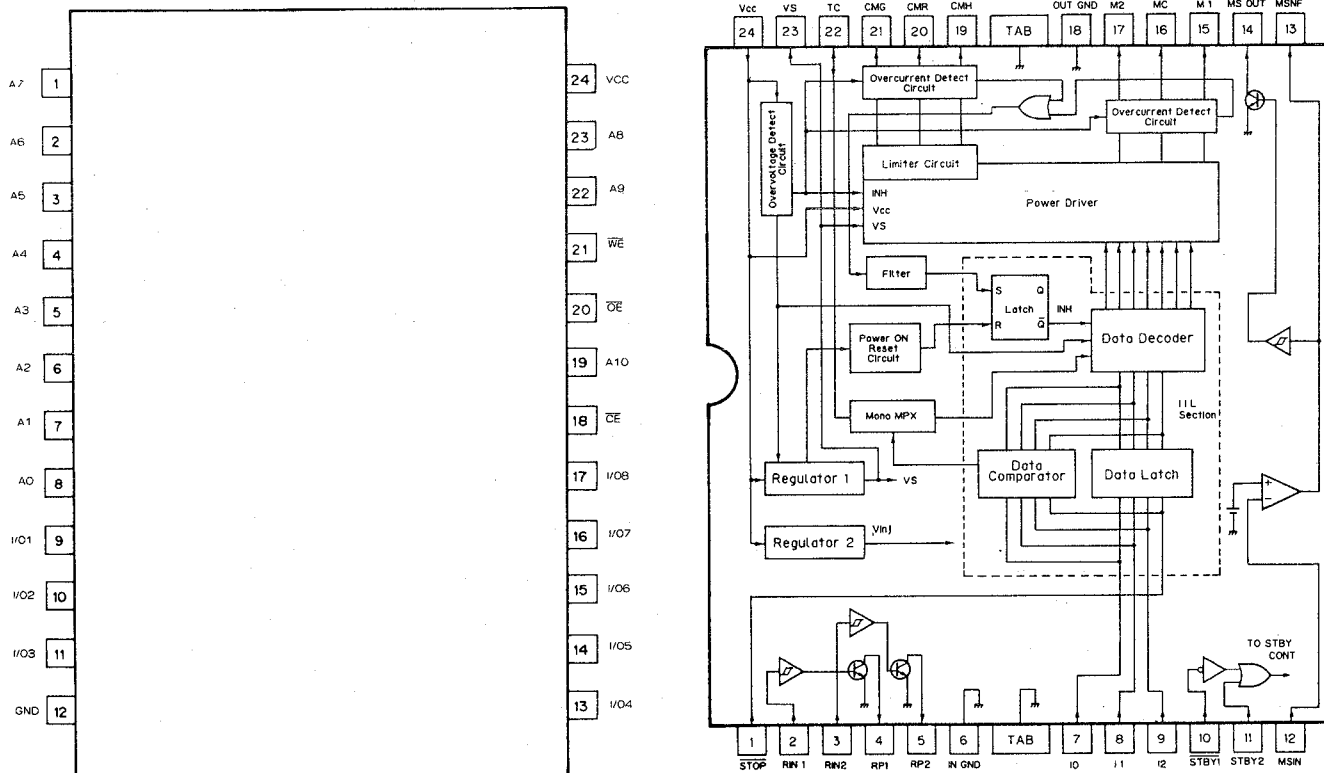


CXA1102P

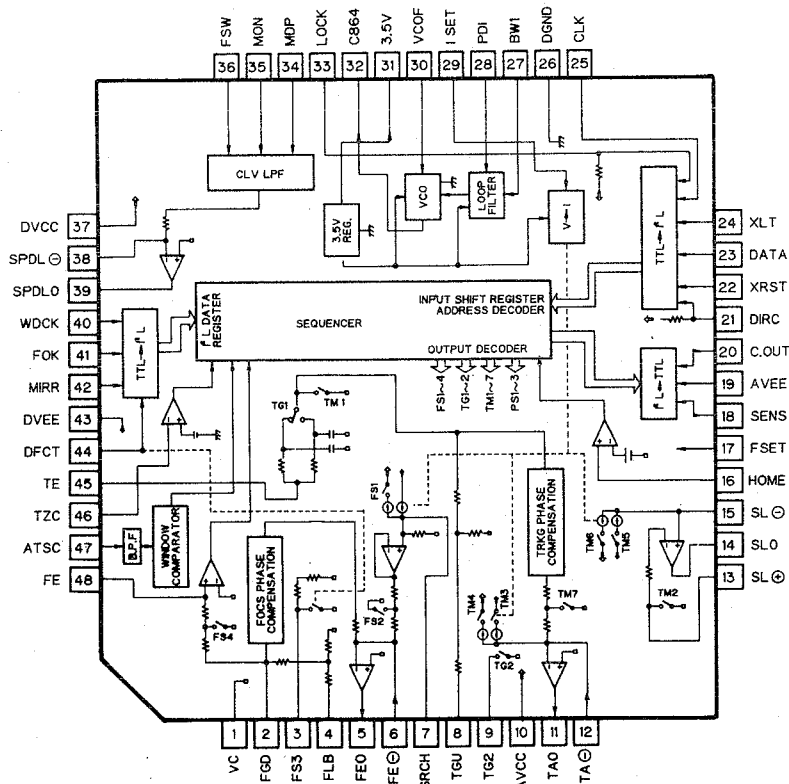


\*CXK5816M-15L

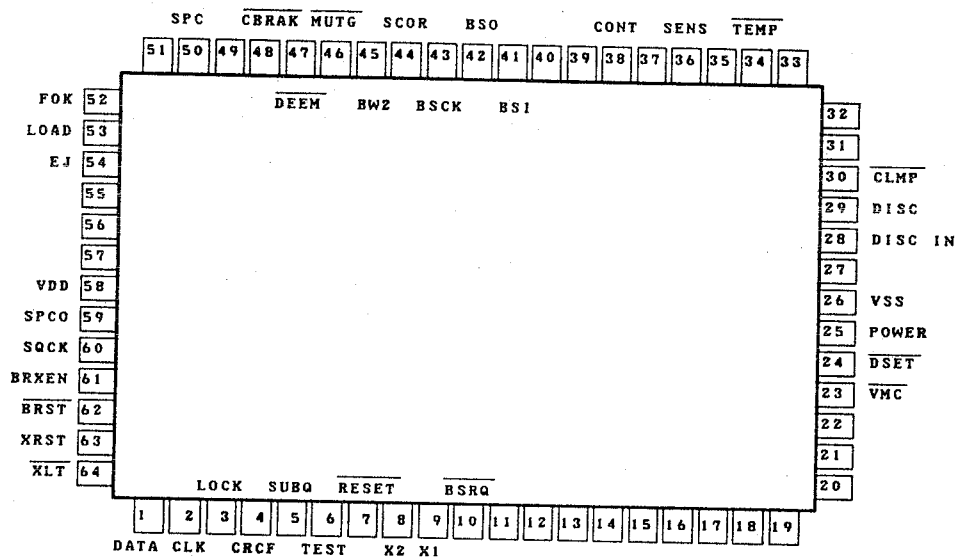
PA3022A



\*CXA1082AQ



\*PD4136B

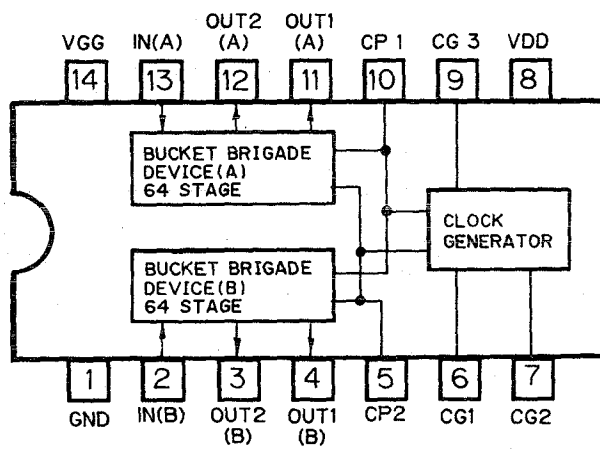


Pin Functions (PD4136B)

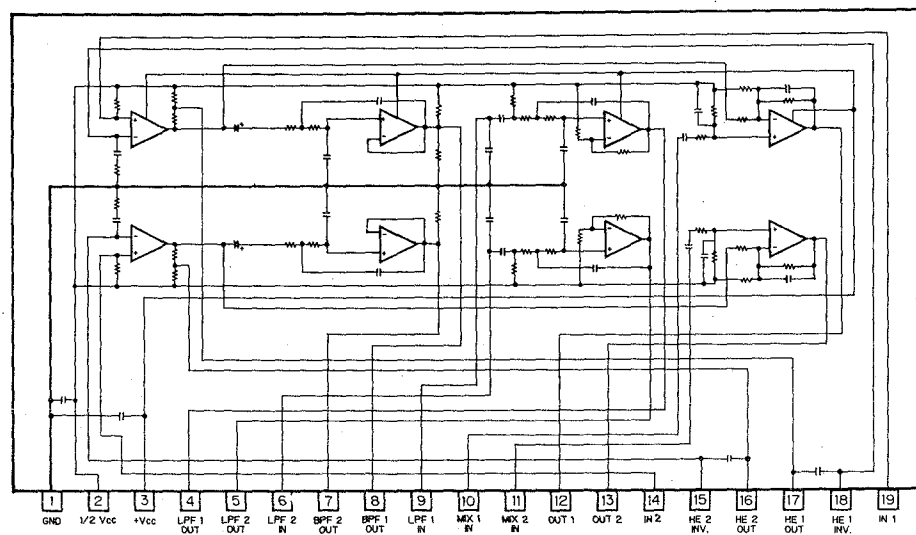
Pin No.	Pin Name	I/O	Function and Operation
1	DATA	CMOS IN	Serial data output
2	CLK	CMOS OUT	Serial data clock output
3	LOCK	CMOS IN	Spindle lock monitor "H"=Lock
4	CRCF	CMOS IN	CRC check result input "H"=CRC OK
5	SUBQ	CMOS IN	Sub-code data input
6	TEST	CMOS IN	Test input
7	RESET	CMOS IN	Reset input
8	X2	CMOS OUT	Oscillator output
9	X1	CMOS IN	Oscillator input
10	BSRQ	CMOS OUT	Service request line "L"=Request
23	VMC	CMOS OUT	Loading power supply control
24	DSET	CMOS OUT	Disc set LED control
25	POWER	CMOS OUT	Regulator ON/OFF control "H"=Regulator ON
26	VSS	—	Ground
28	DISC IN	CMOS IN	Door switch input "H"=Door open

Pin No.	Pin Name	I/O	Function and Operation				
29	DISC	CMOS IN	Disc sensor input "H"=Disc loaded				
30	CLMP	CMOS IN	Disc clamped input "L"=Disc clamped				
34	TEMP	INPUT	High temperature detector				
36	SENS	CMOS IN	CD LSI internal status monitor input				
38	CONT	CMOS OUT	PWM driver ON/OFF "H"=ON				
41	BSI	CMOS IN	Bus data input				
42	BSO	CMOS OUT	Bus data output				
43	BSCK	IN/OUT	Bus serial clock CMOS Input/Output				
44	SCOR	CMOS IN	Sub-code synchronization input				
45	BW2	OUTPUT	Spindle motor output filter time constant selection output High resistivity N channel open drain				
46	MUTG	OUTPUT	Muting output "L"=Mute ON				
47	DEEM	OUTPUT	Emphasis selector output "H"=Emphasis ON High resistivity N channel open drain				
48	CBRAK	OUTPUT	PWM driver brake control "L"=Brake ON				
50	SPC	CMOS IN	Spindle motor rpm indicator "L"=Low speed				
52	FOK	CMOS IN	Indication that focus is closed and RF input is active				
53	LOAD	OUTPUT	Motor drive output	LOAD	H	L	H
54	EJ		High resistivity N channel open drain	EJ	L	H	H
					Load	Eject	Stop
58	VDD	—					
59	SPCO	CMOS OUT	Spindle motor rpm sensor circuit ON/OFF				
60	SQCK	CMOS OUT	Sub-code clock				
61	BRXEN	CMOS OUT	Bus reception enable output "Hi-Z"= Reception enable				
62	BRST	CMOS IN	Bus reset				
63	XRST	CMOS OUT	CD LSI reset output "L"=Reset				
64	XLT	CMOS OUT	Serial data latch output				

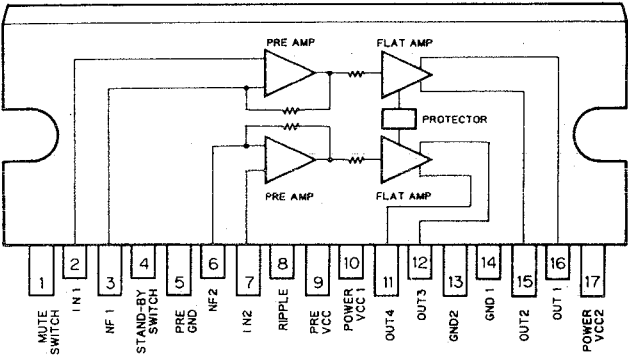
MN3003



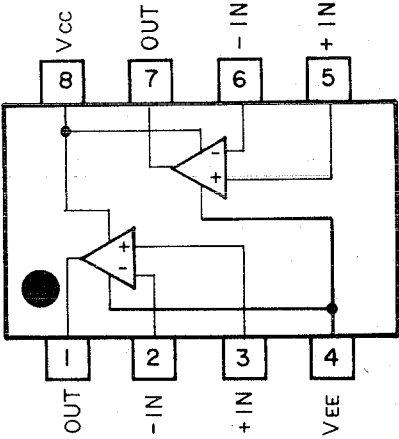
CWW1059



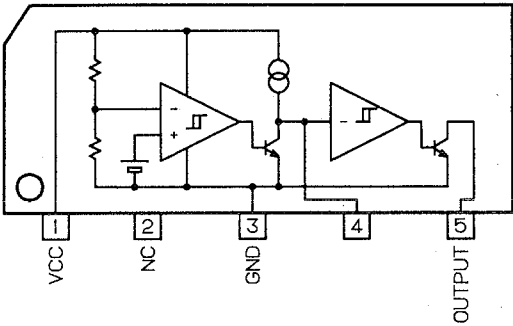
TA8215H



NJM4558MD  
NJM2068MD

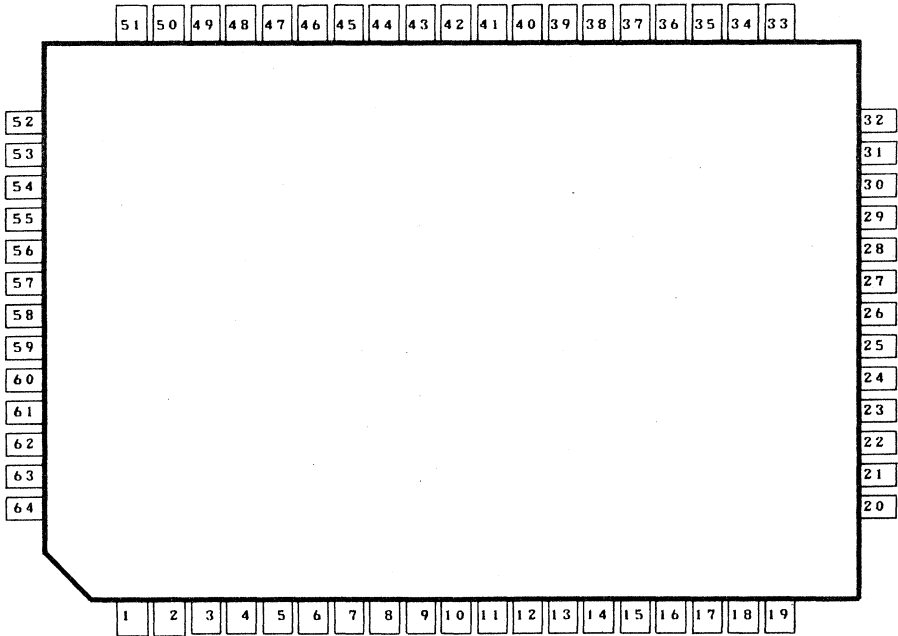


M51953BL





\*PD4155B



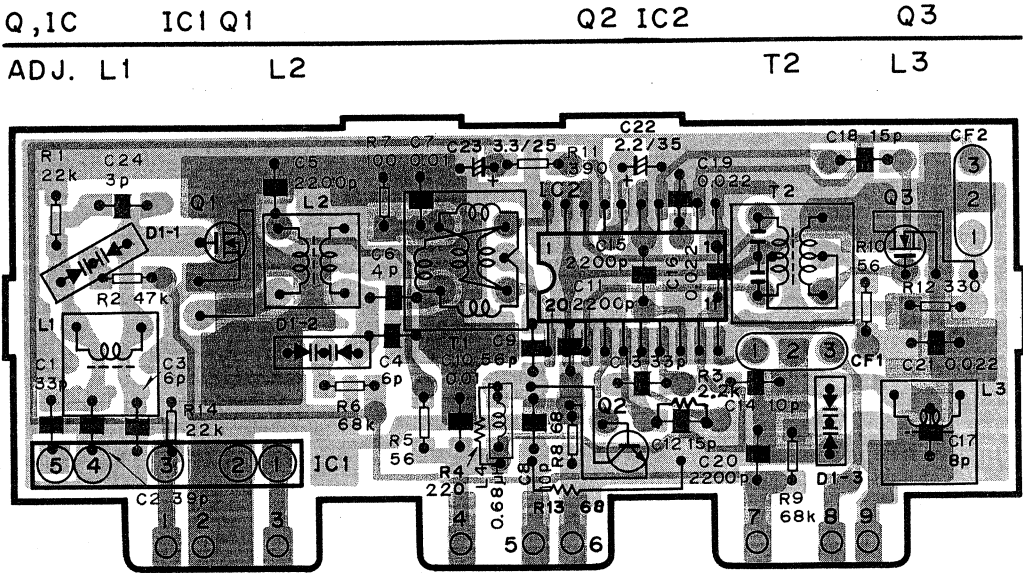
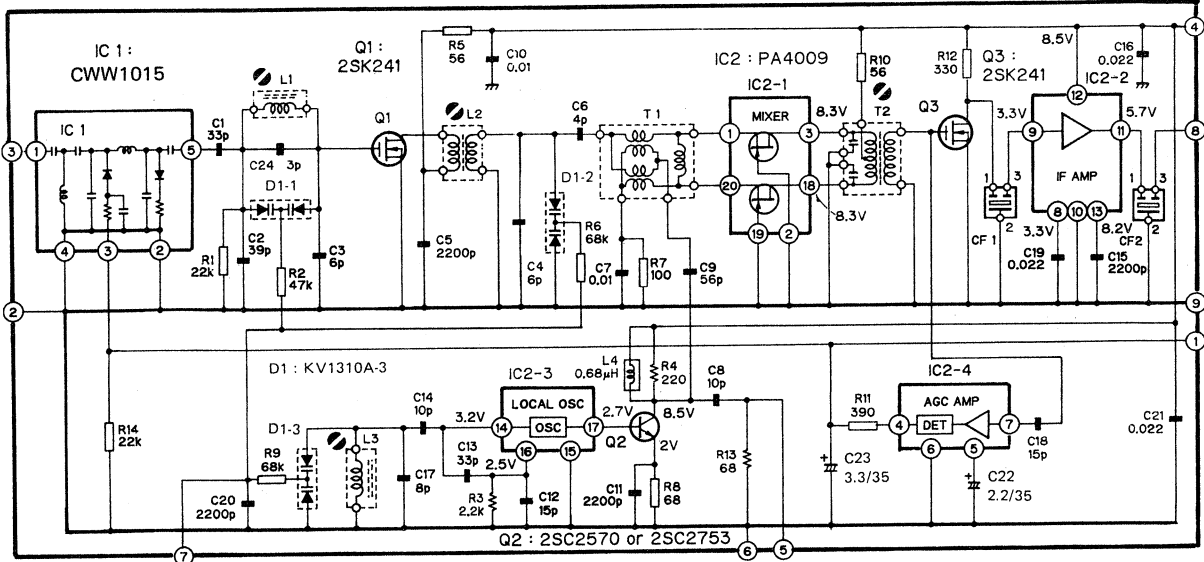
● Pin Functions (PD4155B)

Pin	Pin Name	I/O	Output Format	Standby	Function and Operation
1	PCE	O	C		PLL IC (LC7218) Chip enable
2	NR	O	C	L	Dolby NR switching
3	$\overline{\text{LINH}}$	O	C		LCD driver (LC7582) inhibit output
4	LCK	O	C		LCD driver (LC7582) clock line
5	LDT	O	C		LCD driver (LC7582) data output
6	LCE	O	C		LCD driver (LC7582) chip enable
7	RESET	I			Reset signal input pin
8	X2				Clock generator pin
9	X1				Clock generator pin
10	PLAY	O	C	L	MS filter swiching
11	CM	O	C	L	Capstan motor control
12	$\overline{\text{NES}}$	I			Forward side reel unit ratation pulse pin.
13	$\overline{\text{RES}}$	I			Reverse side reel unit ratation pulse pin.
14	STBY1	O		L	PA3022 standby output pin.
15	$I_2$	O		L	Mechanism control data output pin. Outputs control data for the mechanism driver IC (PA3022)
16	$I_1$	O		L	
17	$I_0$	O		L	
18	MD3	I			Mechanism switch input pin.
19	MD2	I			
20	MD1	I			
21	MD0	I			

Pin	Pin Name	I/O	Output Format	Standby	Function and Operation
22	MST2	O		L	Mechanism switch strobe output pin.
23	MST1	O		L	
24	MST0	O		L	
25	METAL	O		L	Equalizer switch output pin.
26	VSS				GND
27	$\overline{\text{BSENS}}$	I			Backup voltage detection input pin.
28	$\overline{\text{ASENS}}$	I			ACC voltage detection input pin.
29	MS	I			Music signal input pin.
30	PWSW	I			TUNER power on/off input pin.
31–33	NC				
34	SDLEV	I			TUNER SD level detection input.
35	LOCIN	I			During AM opration, detects illumination voltage and switches LOC/DX.
36	PCLCNT	I			Clock output authorization input
37	MUTE		C	H	Mute output pin.
38	PCL/TUNANT	O	C	H/L	Clock output/TUNER antenna output pin.
39	PEE	O	C		Key touch beep output pin
40	SYSPW	O	C	L	Power amplifier ON output pin.
41	BSI	I			Bus data input pin
42	BSO	O			Bus data output pin
43	$\overline{\text{BCK}}$	I/O			Communications clock input/output pin.
44	$\overline{\text{BSRQ}}$	I			Data communications serial poll request.
45	$\overline{\text{TAPPW}}$	O	NM	H (Hiz)	DECK power supply control
46	$\overline{\text{TUNPW}}$	O	NM	H (Hiz)	TUNER power supply control
47	KST1	O	NM	Hiz	Key matrix strobe output.
48	KST0	O	NM	Hiz	Key matrix stroe output.
49–52	KST5–KST2	O	NM	Hiz	Key matrix strobe output.
53–56	KD3–KD0	I			Key matrix return input.
57	NC				
58	VDD				
59	DISB	O	C	H/L	AUX operation disable
60	$\overline{\text{BRST}}$	O	C	L	Bus reset
61	AUX IN	I			AUX operation input
62	PDI	I			LC7218: Data input
63	PCK	O	C		LC7218: Clock
64	PDT	O	C		LC7218: Data output

Output format	Meaning
C	C-MOS
NM	Neutral resistivity N channel open drain

● FM FRONT END (CWB1005)

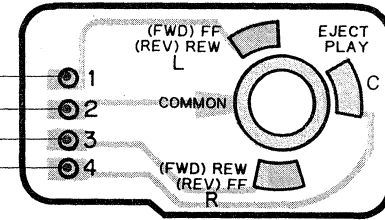


● Circuit Diagram Symbols

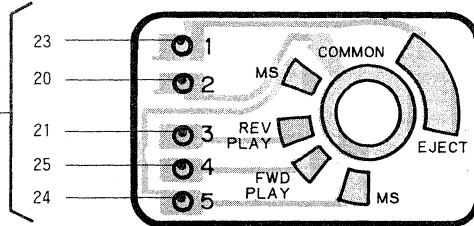
Symbol	Function	Symbol	Function
A	1/4 division detector output used in detection of RF and focus signal	FEO2	Focus 2 (IC655 pin no.1)
ACC	14.4V	FLOAT	Carriage mechanism play position detector signal
AGND	Analog ground	HOME	Home position detector signal (pick-up at home position when "L")
ASY	Asymmetry	IN1	Motor control signal 1
ATSC	Anti-shock (carriage motor control during playback)	IN2	Motor control signal 2
B	1/4 division detector output used in detection of RF and focus signal	IN3	Motor control signal 3
BATT	14.4V (Constant power supply)	ISETY	ISSET resistance pin (IC601 pin no.31)
BDATA	Bus data signal	LAMP	Photo-interrupter drive signal
BRST	Bus reset signal	LD	Laser diode
BRXEN	Bus line busy signal	LOAD	Disc loading power supply ON/OFF signal
BSCK	Bus synchronizing shift clock	MON	Motor ON (spindle forward or reverse when "H")
BSRQ	Bus service request line	MD	Monitor diode
BYPS1	Bypass 1 (non-drive enabled by connecting to ground during PWM IC651 operation)	MUTG	Mute signal (muting ON when "L")
BYPS2	Bypass 2 (non-drive enabled by connecting to ground during PWM IC652 operation)	POWER	Power supply control signal
C	1/4 division detector output used in detection of RF and focus signal	REG5	+ 5V
CBRAKE	PWM driver brake control signal (brake on when "L")	SLO	Carriage output signal (IC601 pin no.14)
CLAMP	Disc set detect signal	SM +	Spindle motor drive signals (PWM OUT)
CM +	Carriage motor drive signal (PWM OUT)	SM -	
CM -		SPC	Spindle motor rpm detector signal (low speed when "L", IC656 pin nos.1 & 7)
CONT	PWM driver ON/OFF signal (ON when "H")	SPCO	Spindle brake (spindle brake when "H", IC751 pin no. 59)
D	1/4 division detector output used in detection of RF and focus signal	SPDLO	Spindle motor error signal (IC601 pin no.39)
DEEM	Emphasis selector switch (emphasis ON when "H")	SPTAO	Tracking side path signal output
DFCT	DEFECT signal ("H" when defect)	SMIN	Spindle motor drive PWM input signal
DGND	Digital ground	STBY	Standby position detector signal
DISC	Disc presence detector signal	TA +	Tracking actuator drive signals (PWM OUT)
E	Tracking signal start detector	TA -	
EFM	8-14 modulation	TAIN	Tracking actuator drive PWM input signal
EJ	Eject key	TEND	Mechanism clamped switching line
END	Carriage mechanism END position detector signal	TGU	Tracking side path input
F	Tracking signal end detector	TIG	Switch ground
FA +	Focus actuator drive signal (PWM OUT)	TOG	Switch ground
FA -		TZC	T.E zero-cross signal
FAIN	Focus drive PWM input signal	VC	Signal reference voltage (2.5V)
FEO	Focus signal output (IC601, CXA1082AQ pin no.5)	VREF	Signal reference voltage buffer output (2.5V)

## 7. CONNECTION DIAGRAM (1)

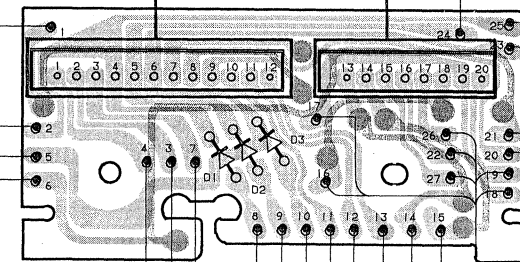
SENSE P.C. BOARD (B)



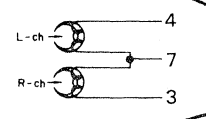
SENSE P.C. BOARD (A)



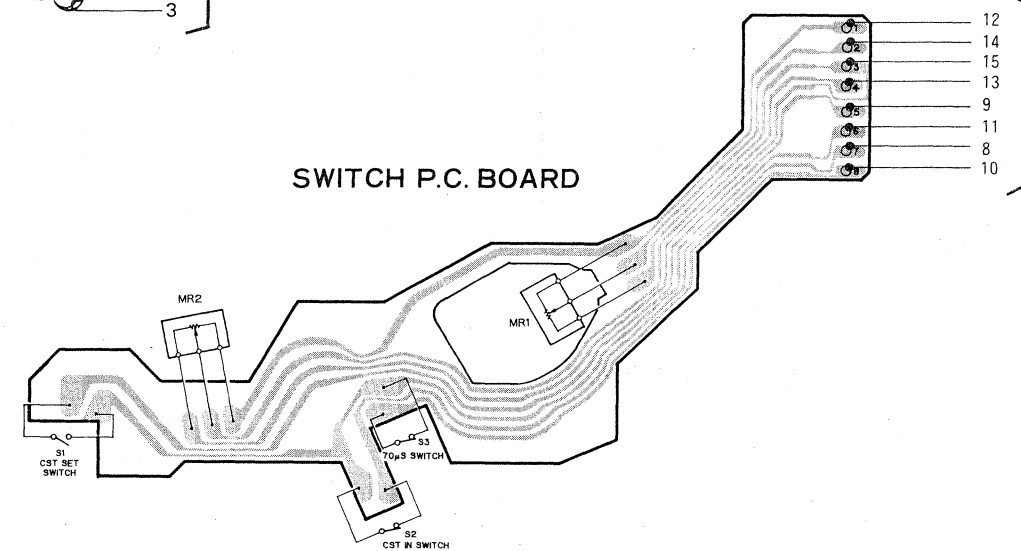
P.C. BOARD UNIT



HD1: HEAD UNIT



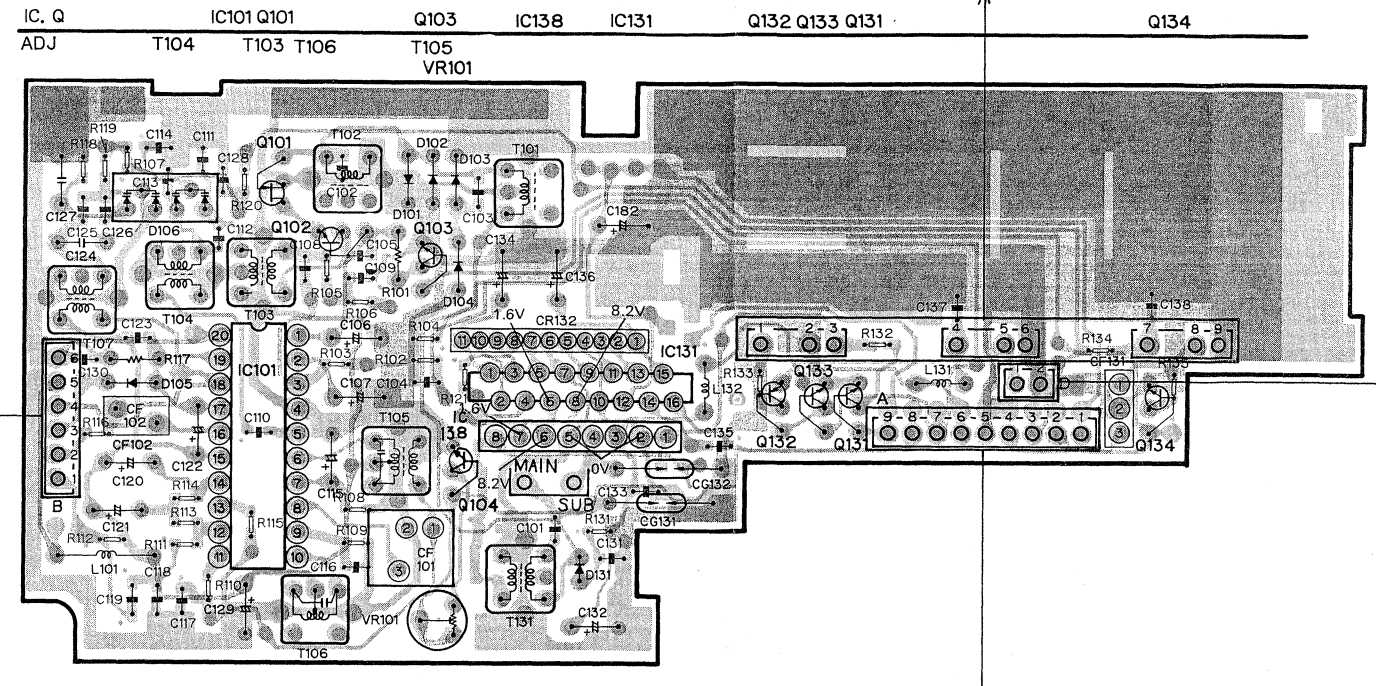
SWITCH P.C. BOARD



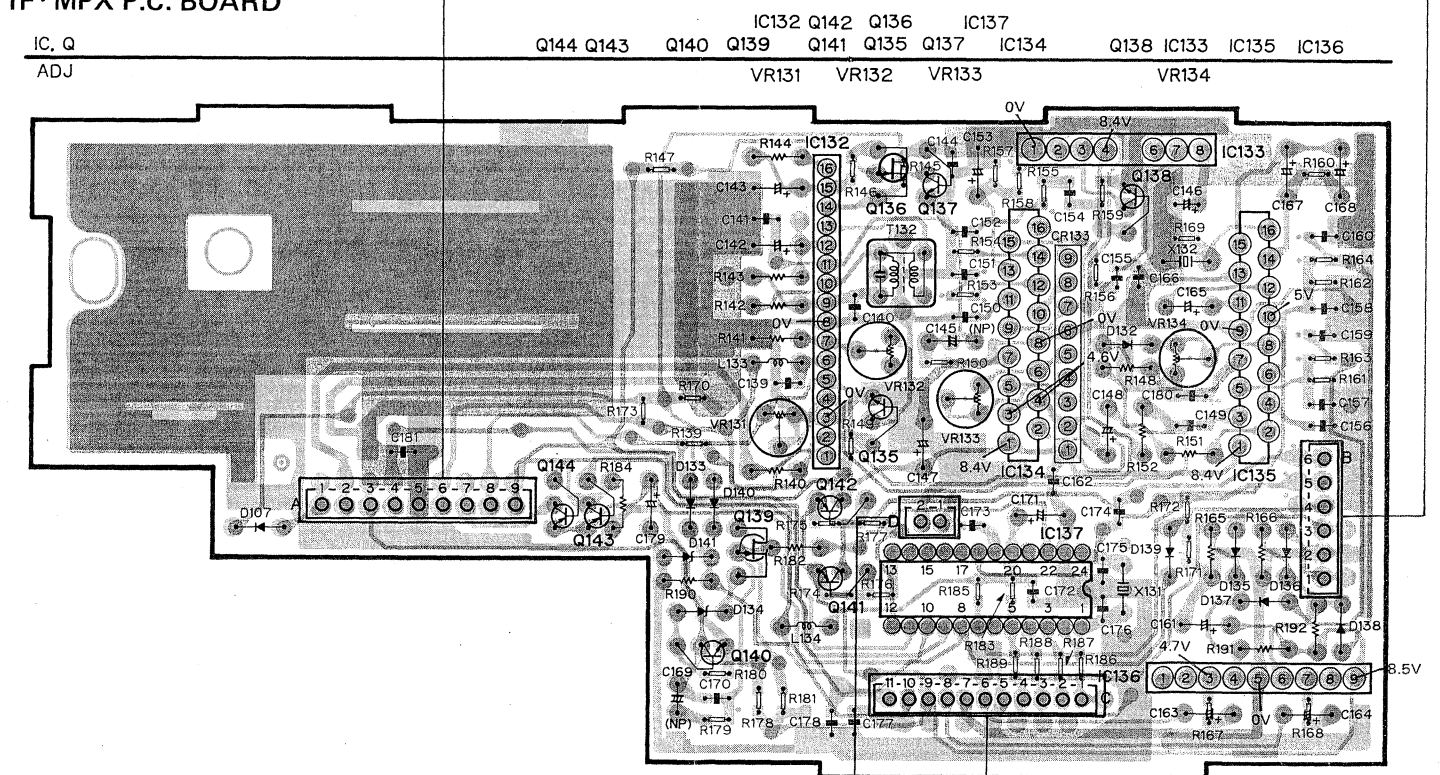
- 16 > (M) MOTOR (FF REW)
- 17 > (M) MOTOR (HEAD)
- 18 > (M) MOTOR (CAPSTAN)
- 19 >
- 20 >
- 21 >
- 22 >

FE·AM P.C. BOARD

FM FRONT END (Page 48)

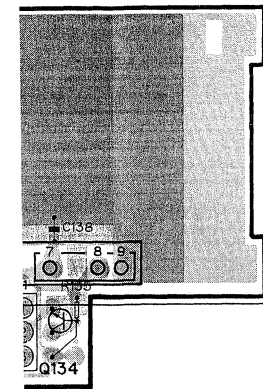


IF·MPX P.C. BOARD

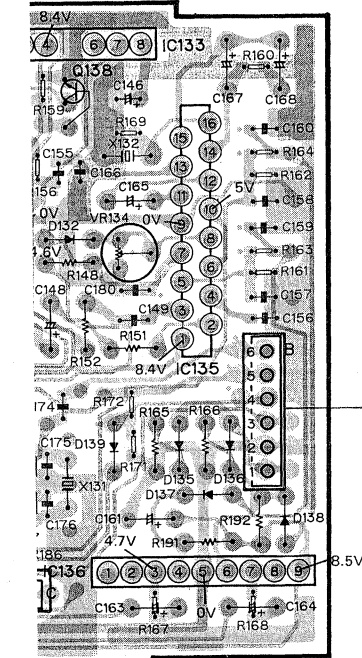




Q134

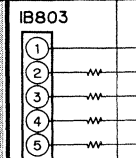
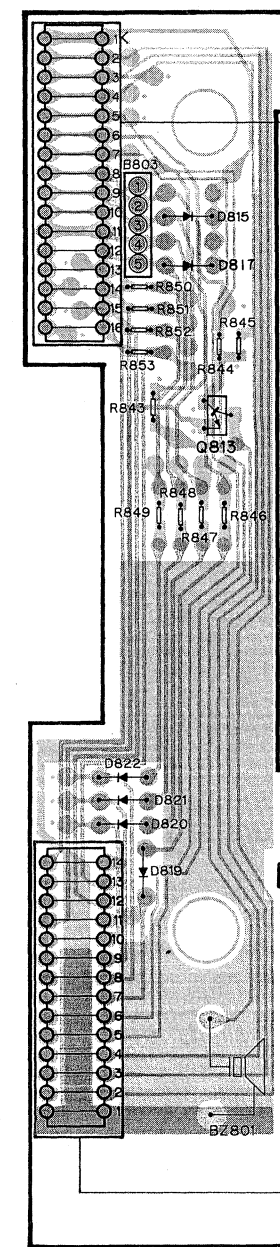


Q138 IC133 IC135 IC136  
VR134



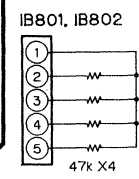
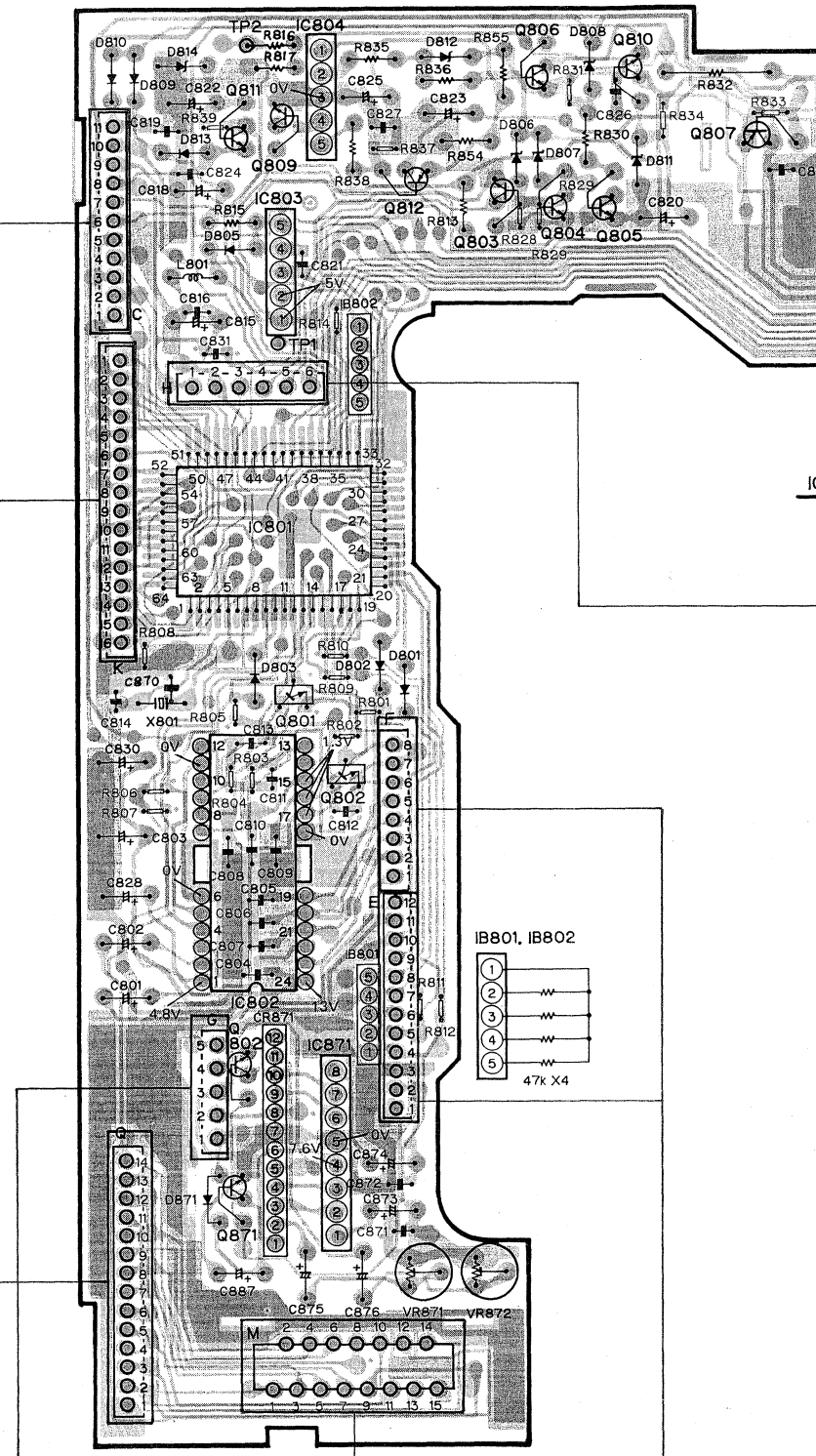
# P.C. BOARD

Q Q813

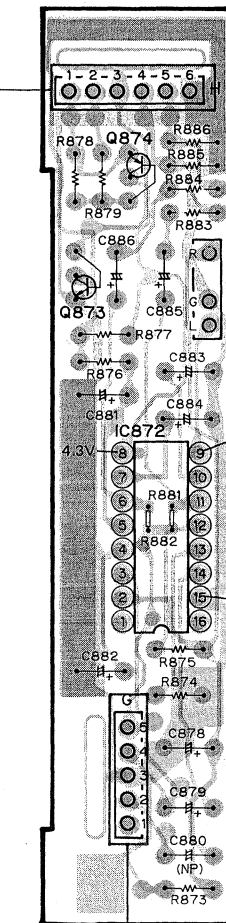


# CONTROL P.C. BOARD

IC803 Q802  
IC801 Q871 Q801 IC804  
IC. Q IC802 Q811 Q809 IC871 Q812 Q803 Q806 Q804 Q810 Q807  
ADJ VR871 VR872



IC. Q Q873 Q874 IC872



# DOLBY NR P.C. BOARD

AUDIO POWER  
UNIT  
TO J

CD UNIT  
TO L

KEY BOARD UNIT  
TO M

Fig. 50

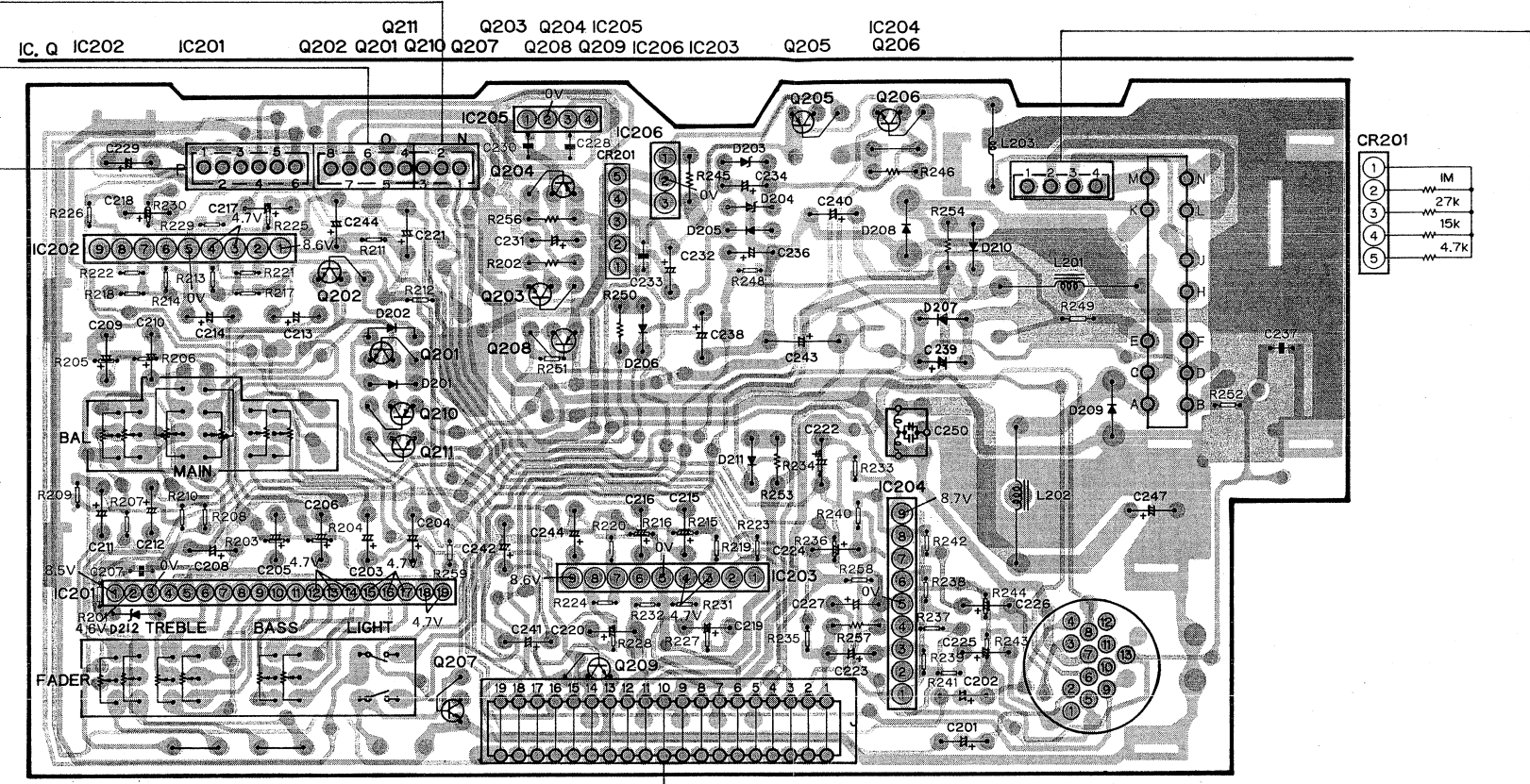
1 2 3 4 5

AUDIO POWER UNIT

CD UNIT  
TO CN352

CD UNIT  
TO CN353

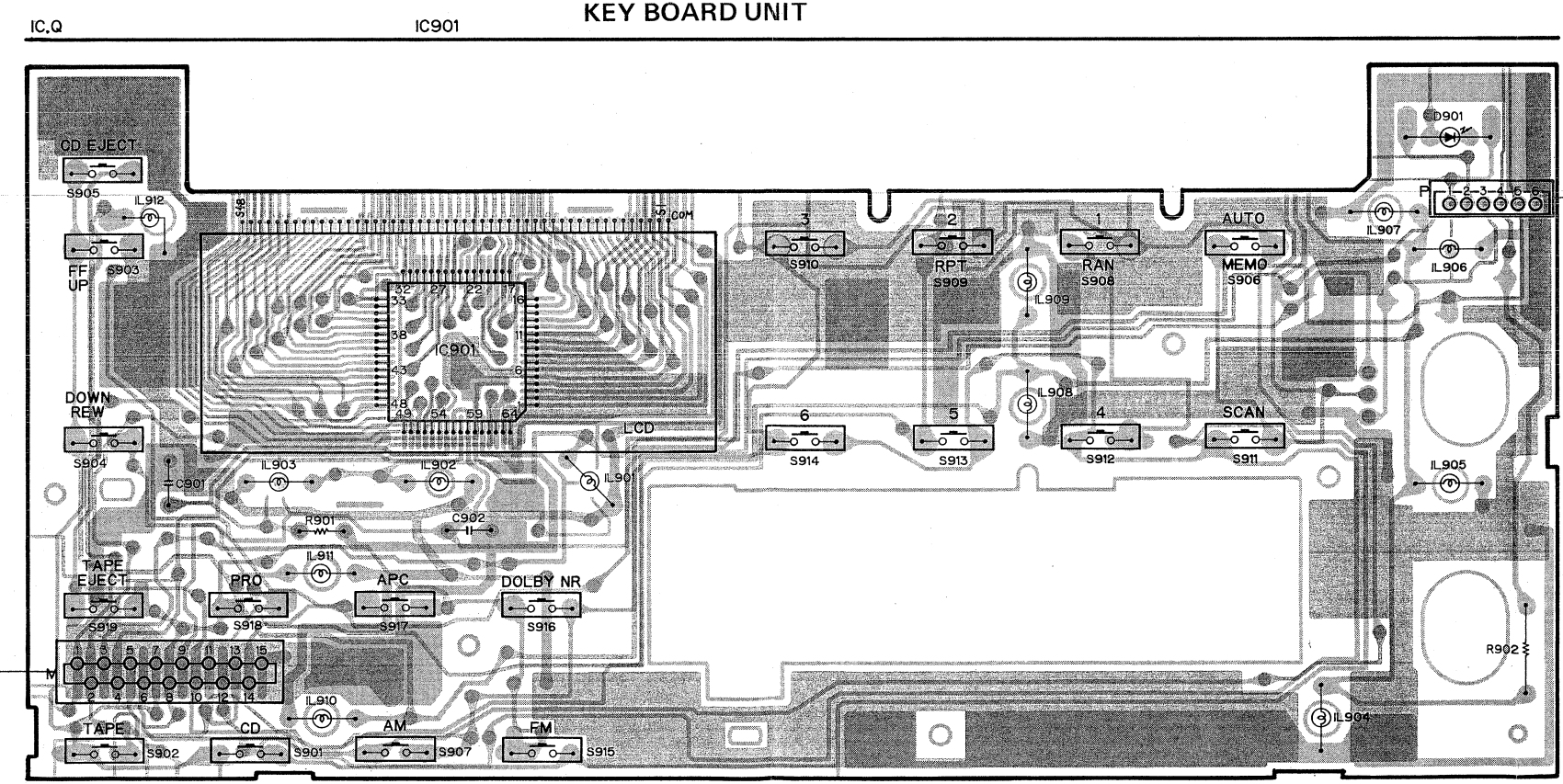
CONNECTOR  
P.C. BOARD



CONTROL P.C. BOARD  
TO J

KEY BOARD UNIT

CONTROL P.C. BOARD  
TO M



1 2 3 4 5 6

A

B

C

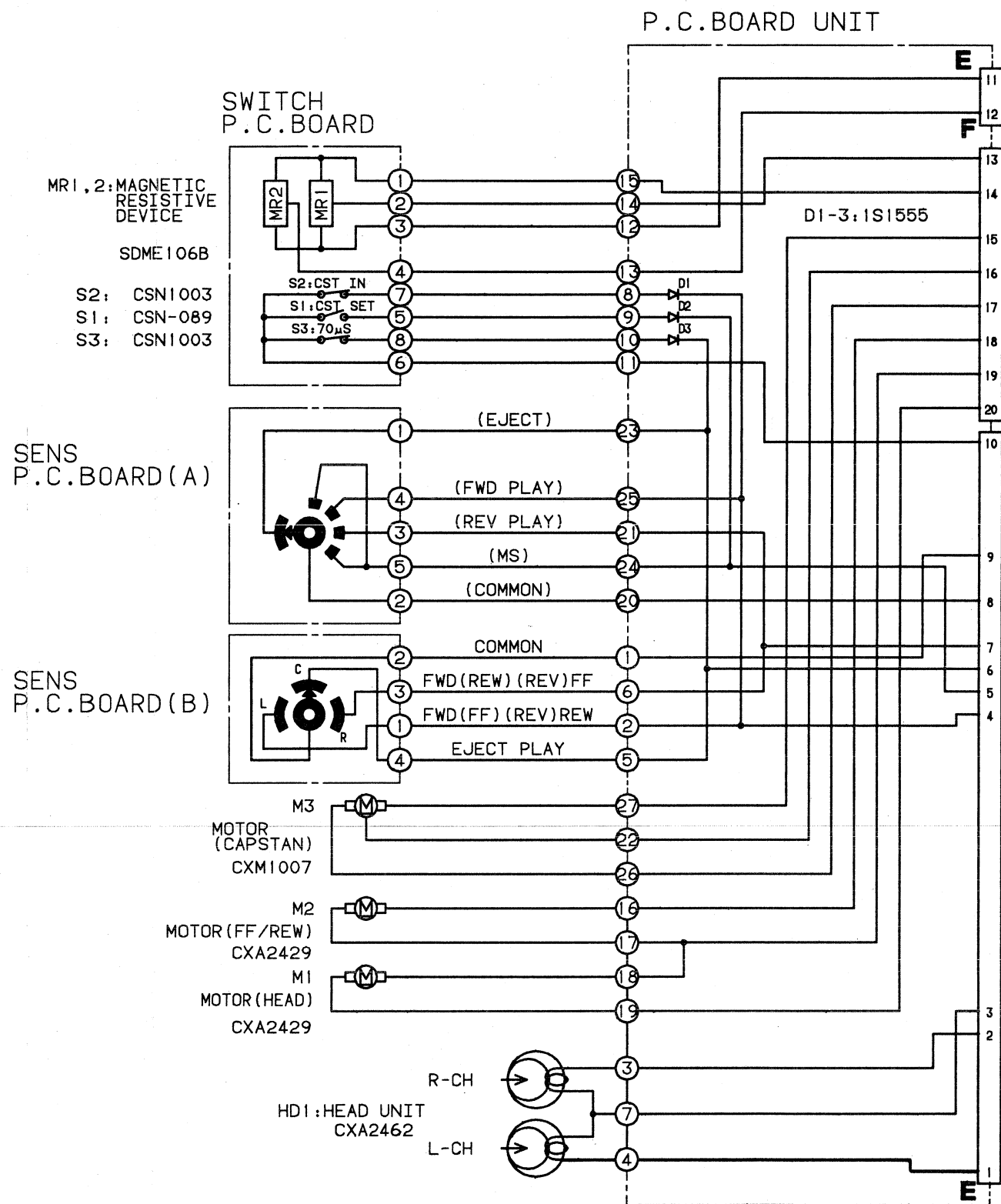
D

A

B

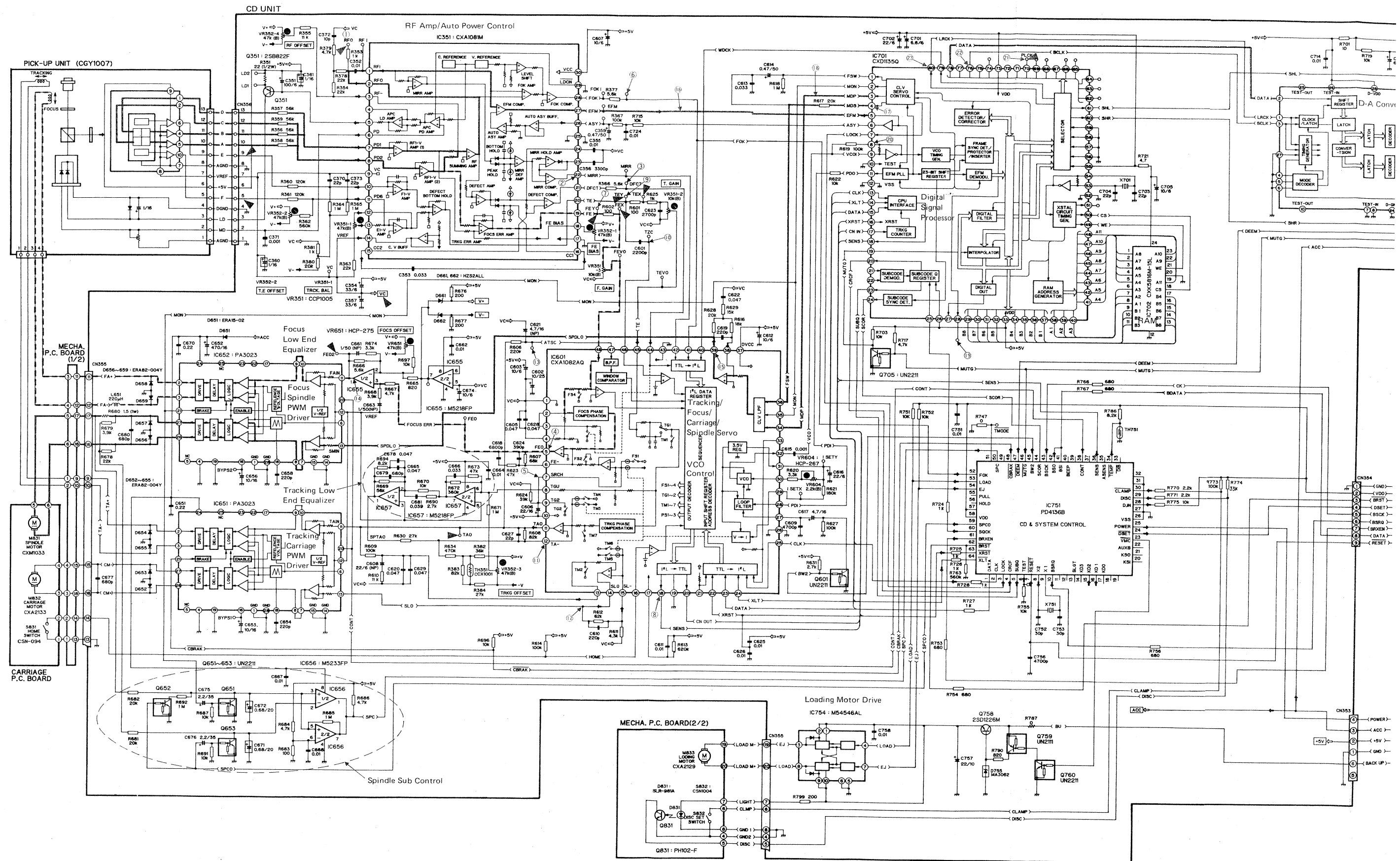
C

D





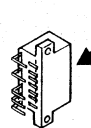
# 10. SCHEMATIC CIRCUIT DIAGRAM (2)







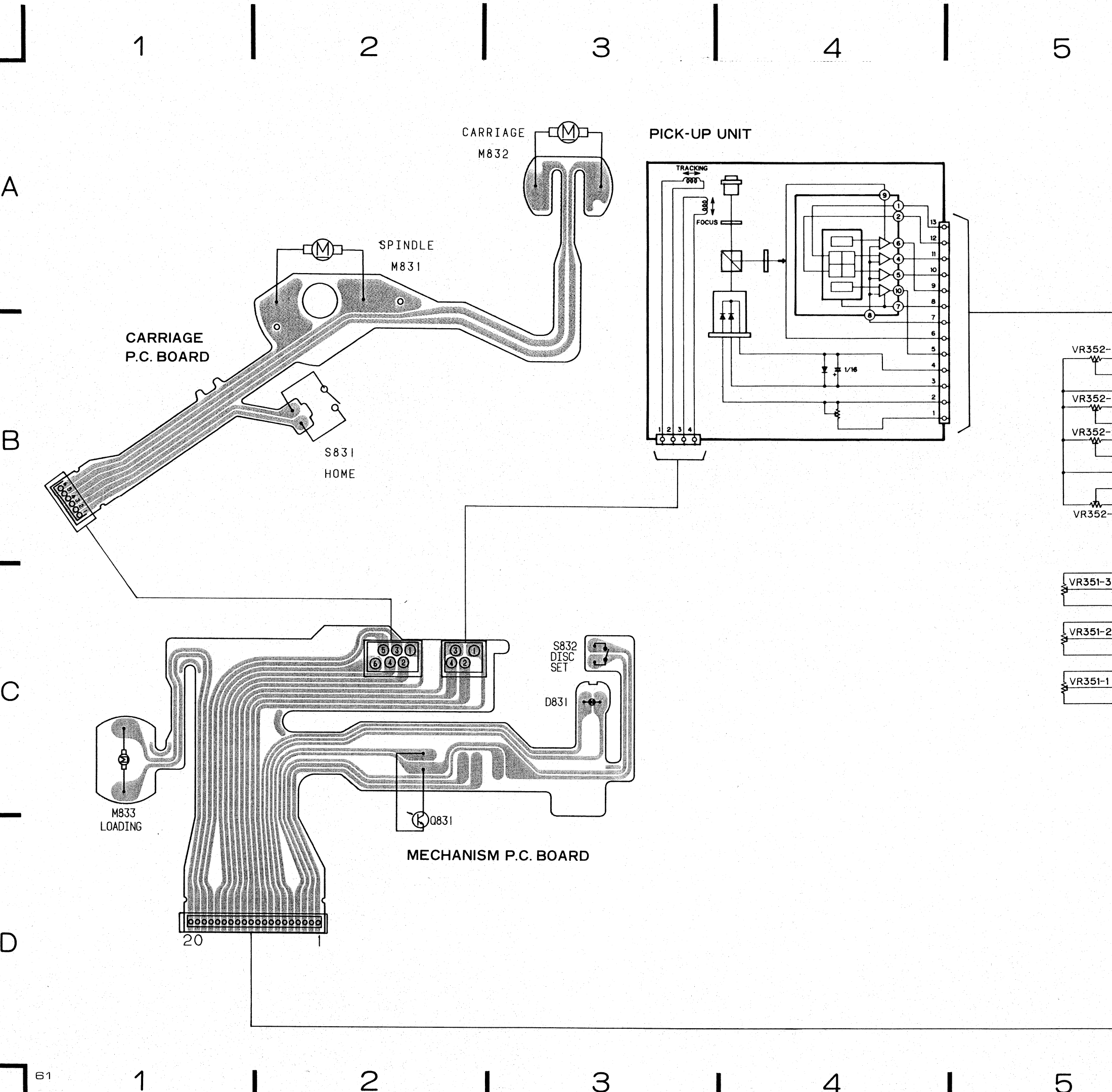
A  
B  
C  
D  
E  
F



Test Tape 315Hz 0dB



9. CONNECTION DIAGRAM (2)





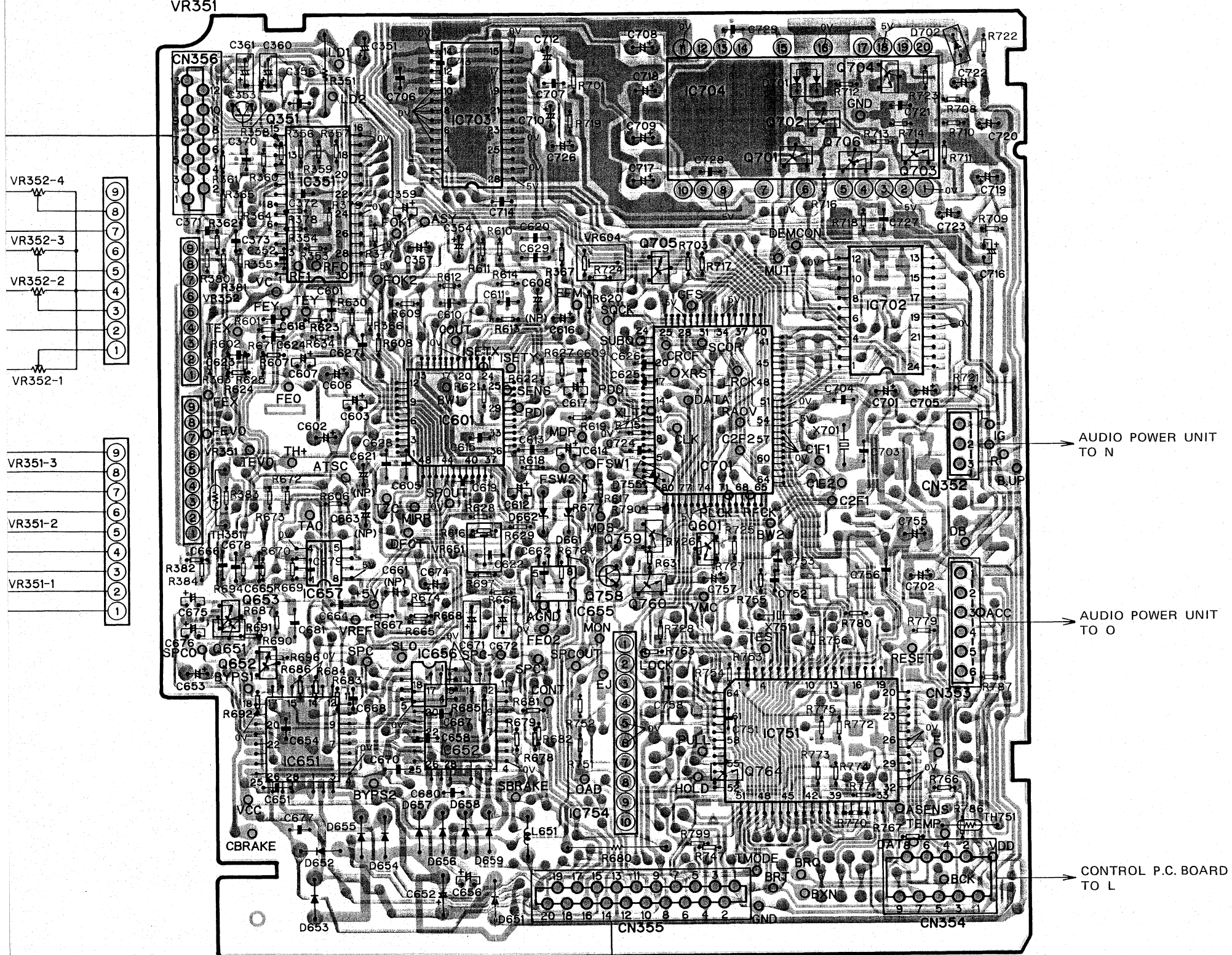
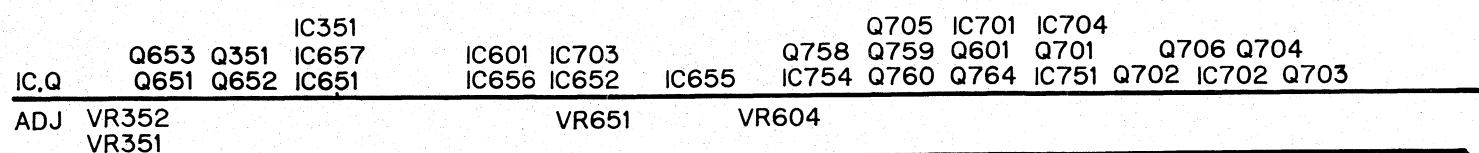
6

7

8

9

CD UNIT

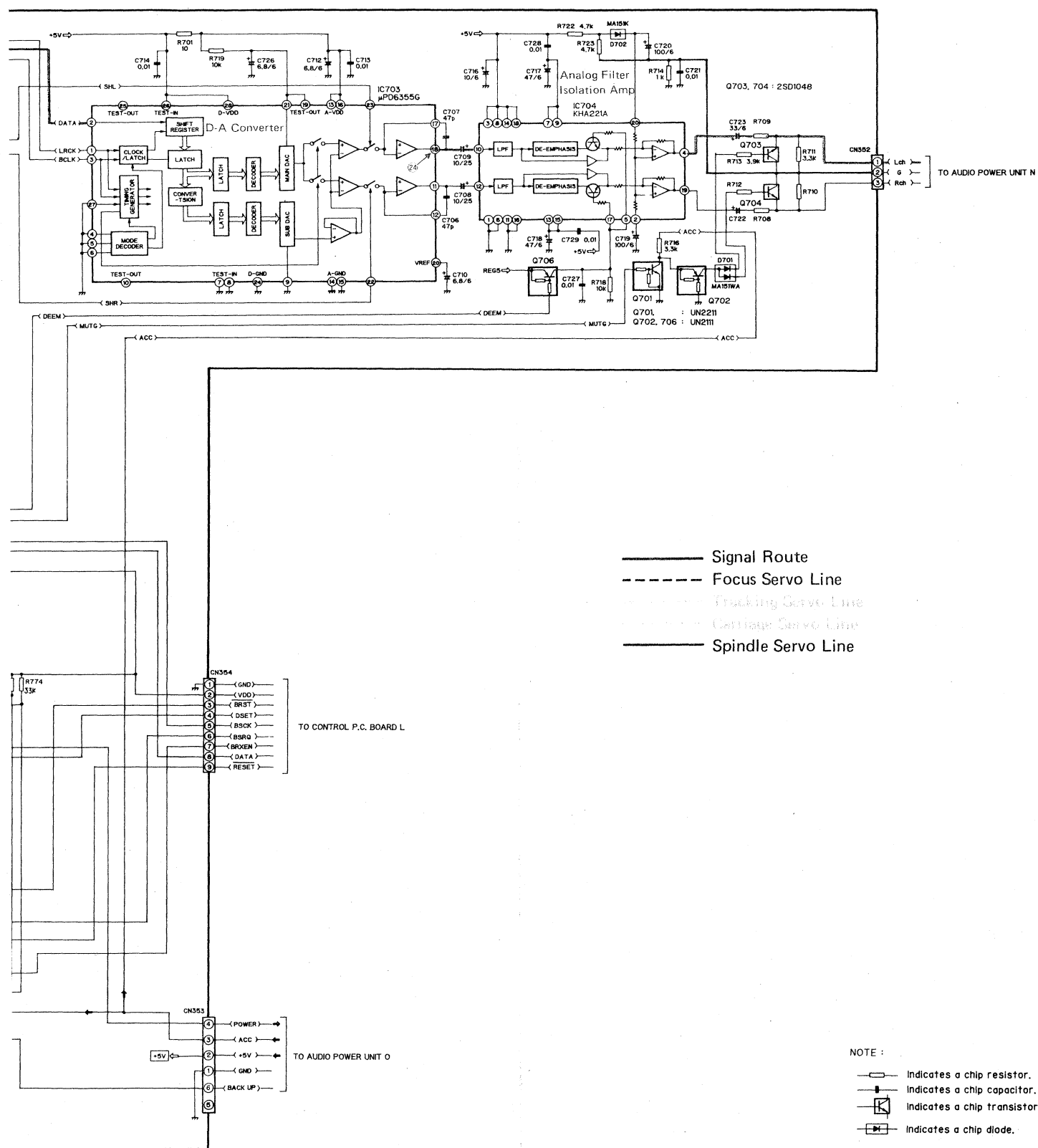


6





7

8

9



NOTE :

-  Indicates a chip resistor.
-  Indicates a chip capacitor.
-  Indicates a chip transistor.
-  Indicates a chip diode.

## SWITCHES

S831 : HOME SWITCH ..... ON — OFF  
S832 : DISC SET SWITCH ..... ON — OFF

The underlined indicates the switch position.

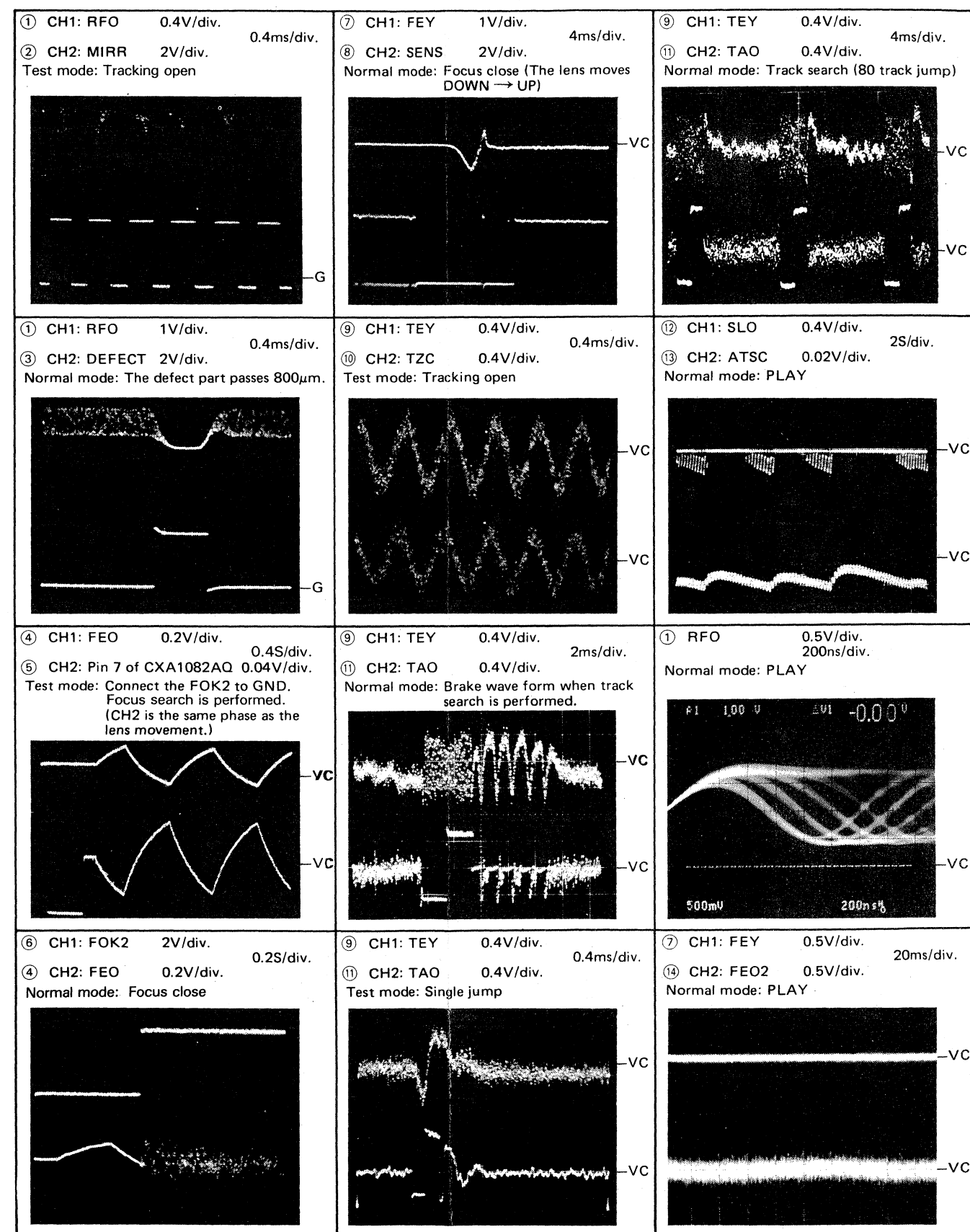
Fig. 53

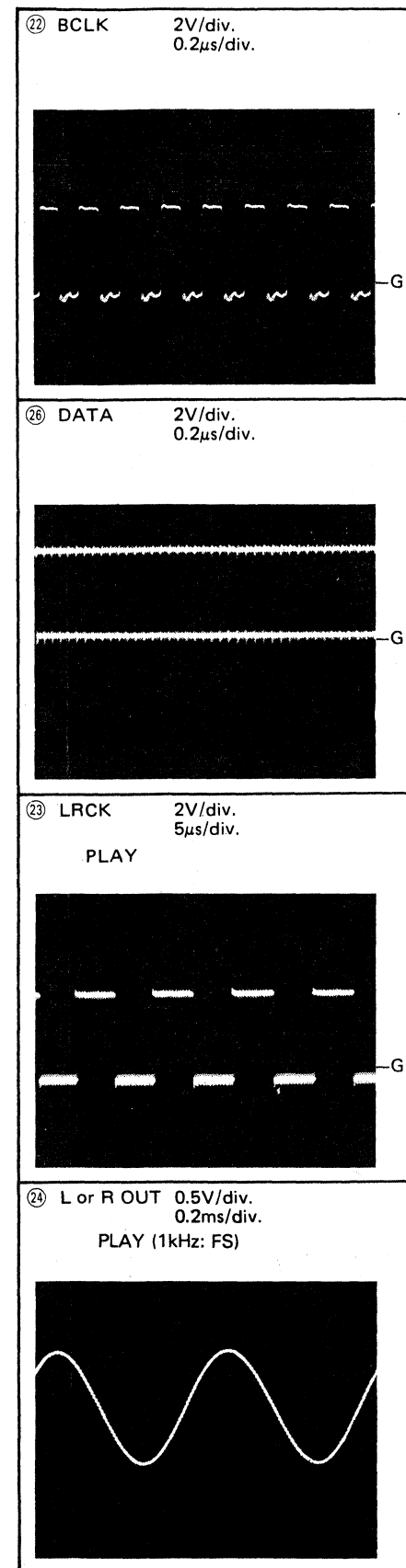
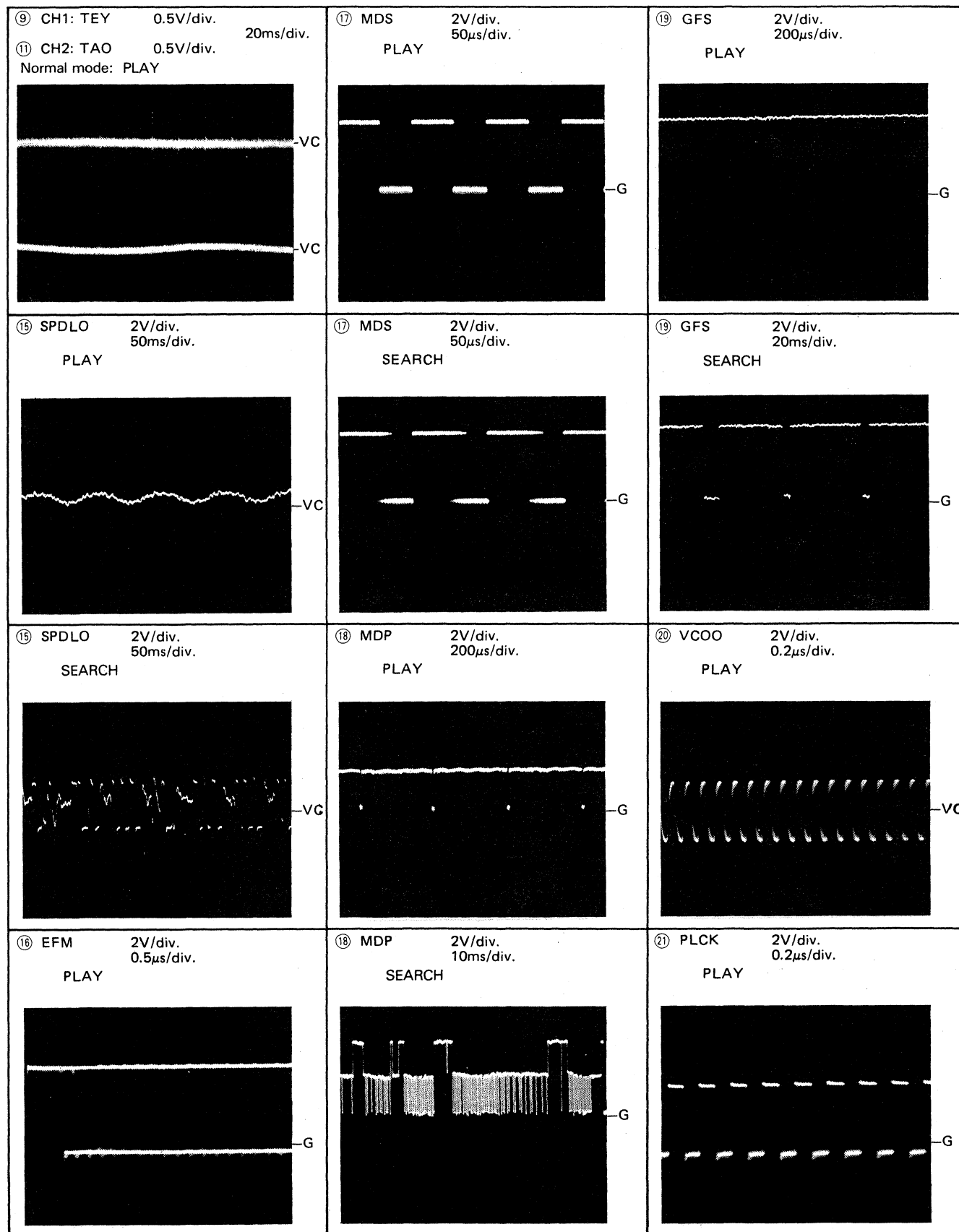
- **Wave Forms**

Note: 1. The encircled numbers denote measuring points in the circuit diagram.

2. Reference voltage.

G: GND      VC: Pin 14 of CXA1081M (2.5V)





A

B

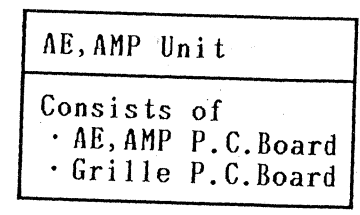
C

D

AM FM C  
CD COI

AM FM C  
CD COI

- AE PROCESSING UNIT
- DEH-K4041ZM, XF-4041ZM-91

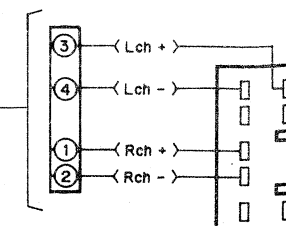
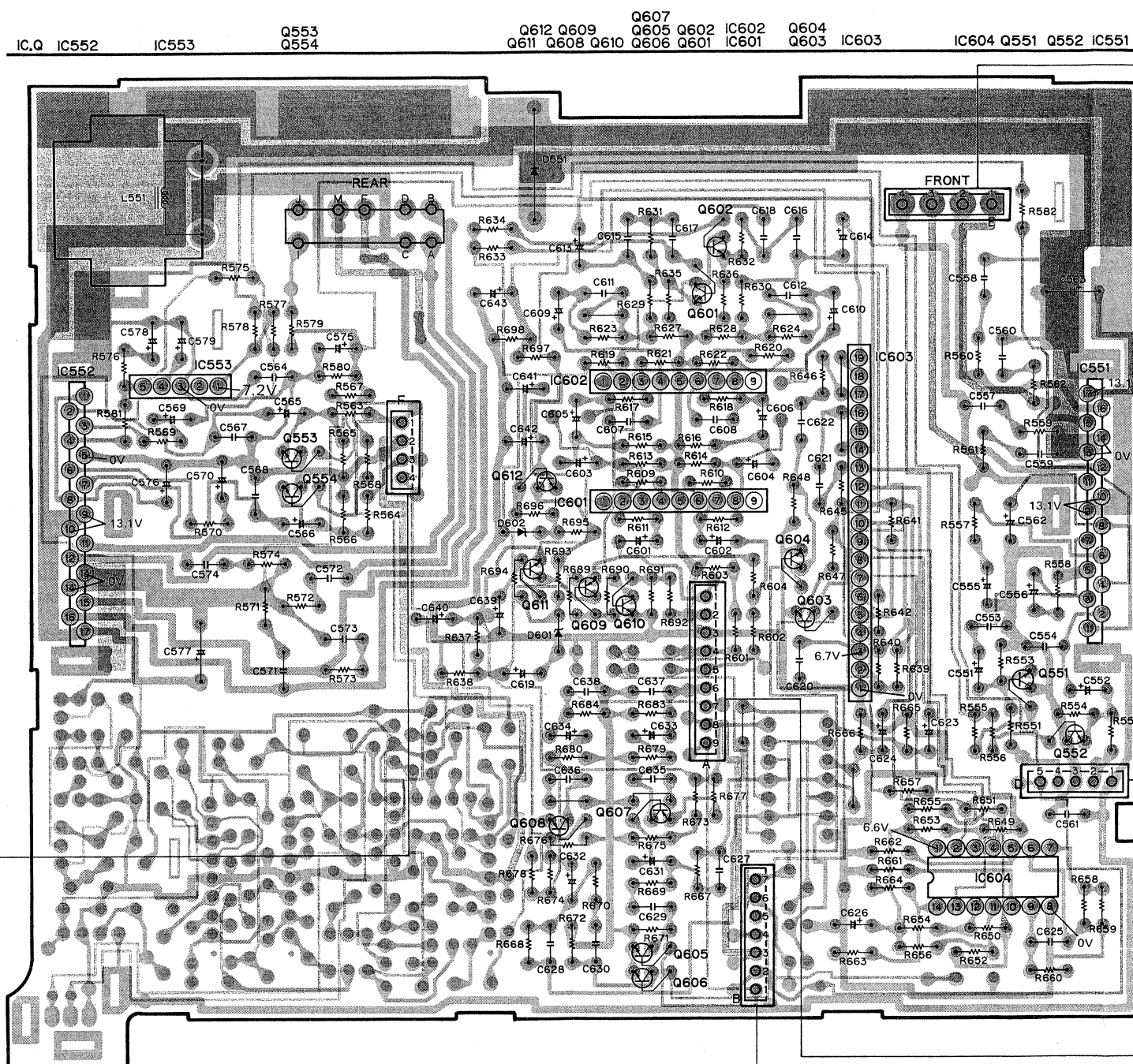




## 12. CONNECTION DIAGRAM (3)

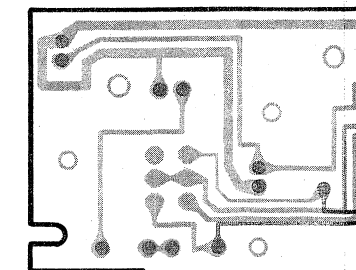
- AE PROCESSING UNIT
- DEH-K4041ZM, XF-4041ZM-91

### AE AMP P.C. BOARD

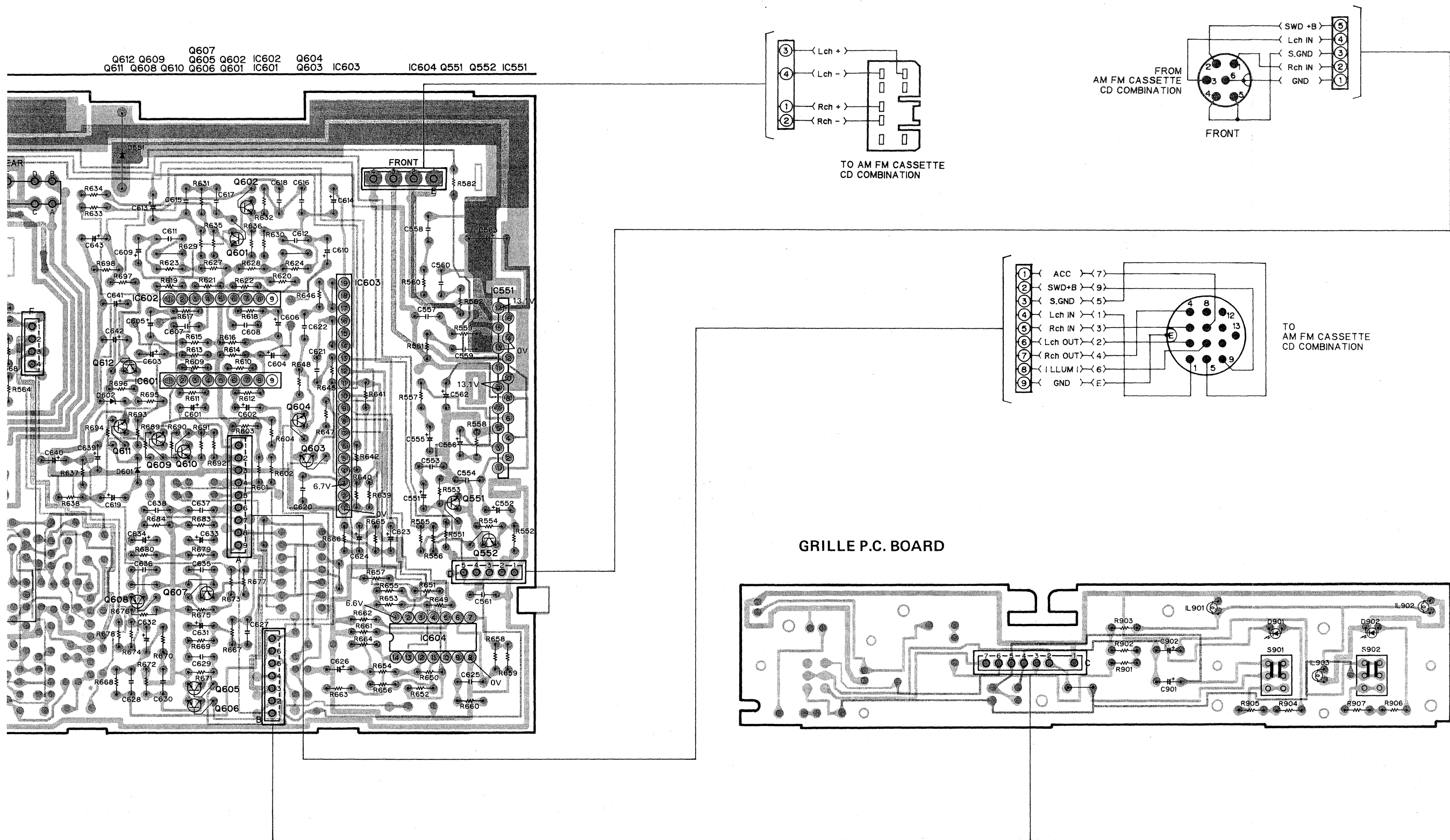


TO AM FM CASSETTE  
CD COMBINATION

### GRILLE P.C. BOARD







A

B

C

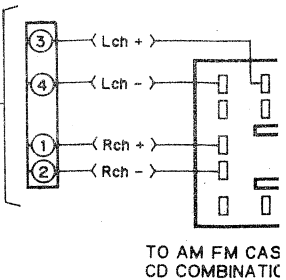
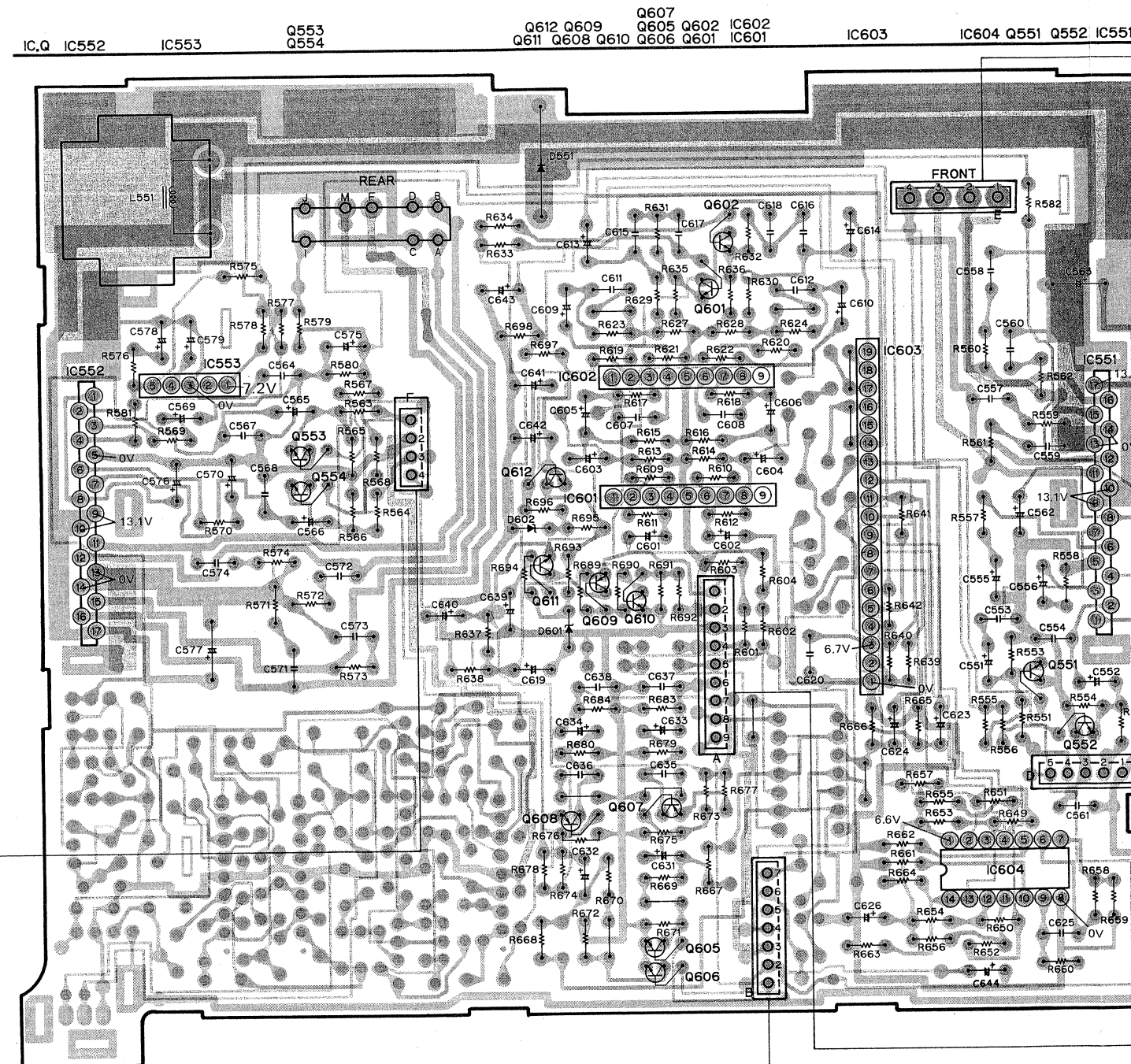
D

Fig. 55

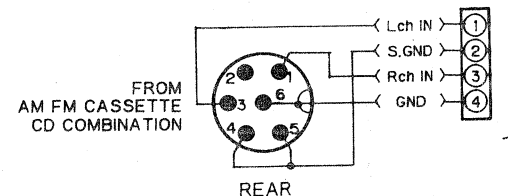
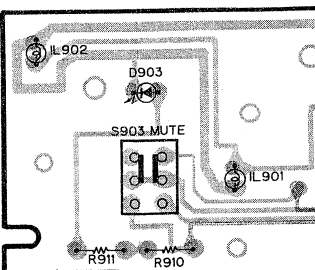
# 13. CONNECTION DIAGRAM (4)

- AE PROCESSING UNIT
- DEH-K4141ZM, XF-4141ZM-91

AE-AMP P.C. BOARD



GRILLE P.C. BOARD



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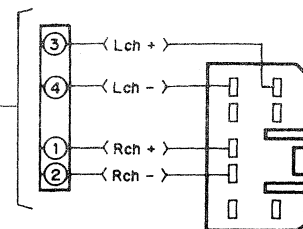
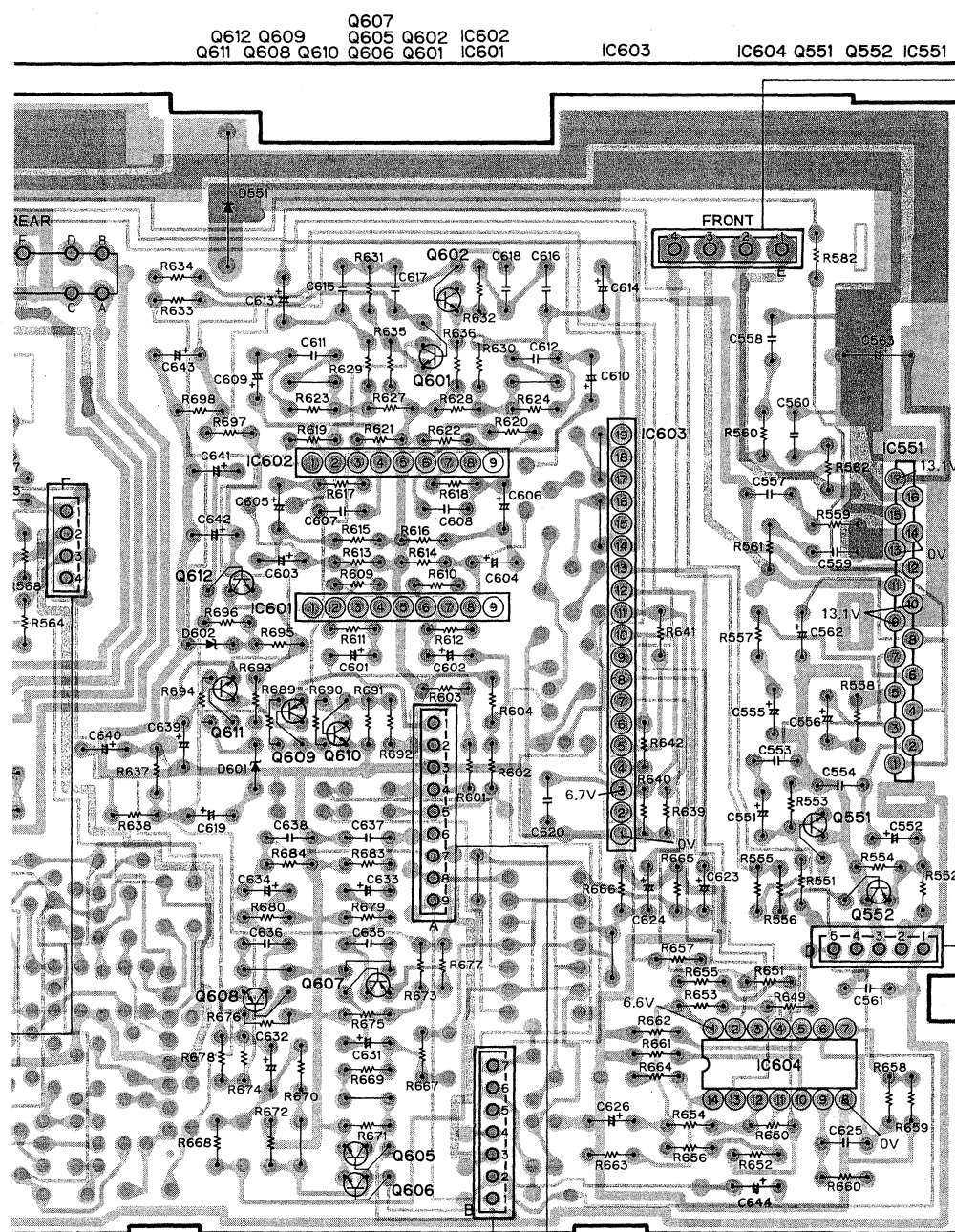
9

A

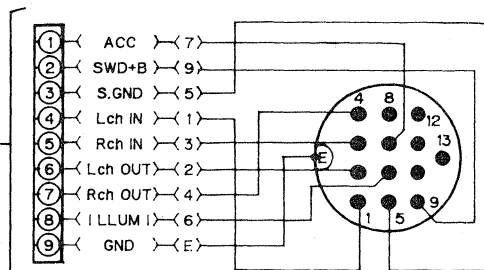
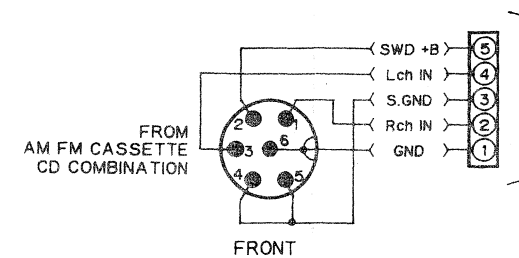
B

C

D

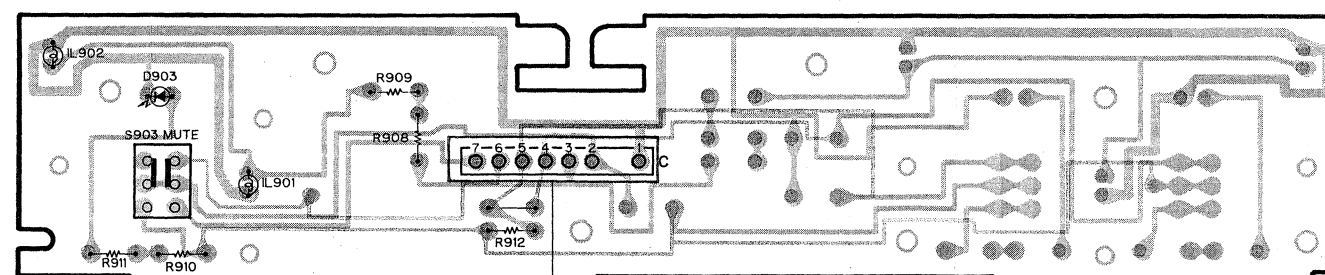


TO AM FM CASSETTE  
CD COMBINATION



TO AM FM CASSETTE  
CD COMBINATION

GRILLE P.C. BOARD



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Fig. 56

14. SCHEMATIC CIRCUIT DIAGRAM (4)

- AE PROCESSING UNIT
- DEH-K4141ZM, XF-4141ZM-91

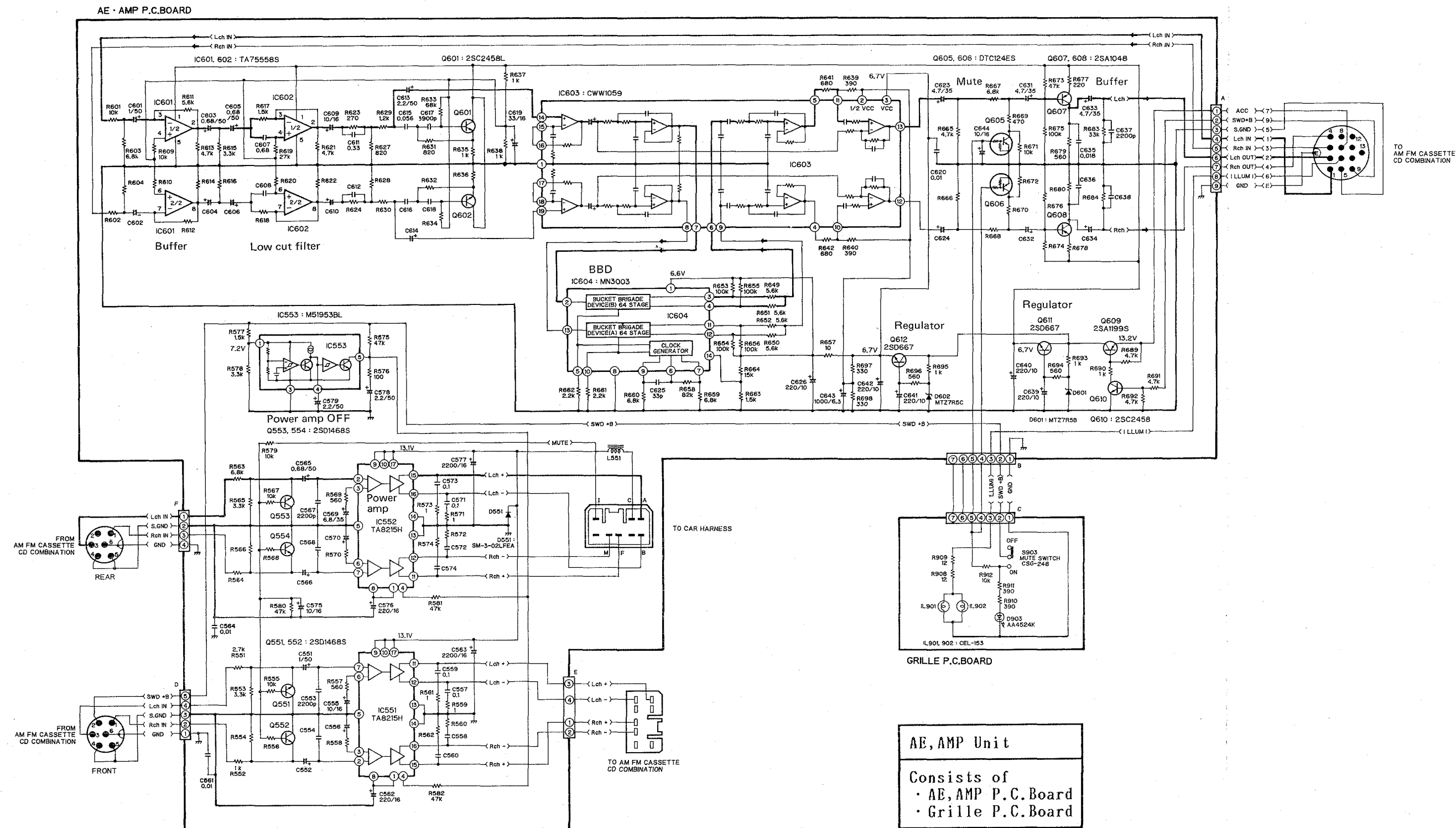


Fig. 57



15. CD MECHANISM EXPLODED VIEW

NOTE:

- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★: GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

• Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	BMZ26P030FMC	Screw	★★	31	CXA2129	Motor Unit>Loading)
	2		Bracket		32		Bracket
	3	CLA1311	Collar		33	CKS-719	Connector
	4	CBA1062	Screw		34	CKS-721	Connector
	5	CBH1182	Spring	★	35	SLR-981A	LED
	6	CNV1641	Holder		36	CNV1639	Holder
	7		Arm		37		Connector
	8	CBH1137	Spring		38	CNP1711	P.C.Board
	9	CBA1076	Screw		39	YE15FUC	Washer
	10		P.C.Board		40		Arm Unit
	11		Bracket Unit		41	CLA1472	Collar
	12		Chassis Unit		42		Lever
	13		Cushion		43	CLA1309	Collar
	14	CBA1075	Screw		44	CNV1630	Gear
	15	CXA2148	Damper Unit		45		Arm Unit
	16	CBH1139	Spring		46		Holder
	17	CNV1633	Holder		47		Spacer
	18	YE20FUC	Washer		48		Arm Unit
	19	CNV1631	Cam		49	CBH1134	Spring
	20	CBF-166	Washer		50	CNM2152	Spacer
	21		Bracket		51		Lever Unit
	22	CNV1636	Roller		52		Bracket
	23		Guide		53	CNV1634	Roller
	24		Arm Unit		54	CBF1002	Washer
	25	CBH1135	Spring		55	CBH1133	Spring
	26	CNV1884	Bearing		56		Bracket Unit
★★	27	CBA1070	Screw		57	CNV1632	Bearing
	28	CSN1009	Switch(Disc Set)		58	CBH1181	Spring
	29	CNV1644	Holder		59		Arm Unit
	30	HBA-175	Screw		60	CNV1628	Gear

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	61	CNV1627	Gear		86	CNV1780	Holder
	62	CNV1629	Gear		87	CNV1674	Holder
	63	CXA2456	Gear Unit	★★	88	CSN-094	Switch(Home)
	64		Bracket Unit	★★	89	CXM1033	Motor Unit(Spindle)
	65	CNY-265	Cushion	★★	90	CNT1020	Belt
⊙	66	CXA1910	Carriage Unit		91	CXA2375	Screw Unit
	67	CBH1136	Spring		92	CNV1781	Holder
	68		Arm Unit		93	CNP1709	P.C.Board
	69		Spacer		94		Shaft
	70	CNR1079	Ball		95		Shaft
	71	CNV1643	Clamper		96	CNV1512	Holder
	72		Guide		97	CGY1007	PU Unit
	73		Chassis Unit		98	CBH1199	Spring
	74	CNC1738	Holder		99	CBL1010	Short Pin
	75	CNC1739	Holder		100	CBH1105	Spring
	76	PMS20P030FMC	Screw		101	CNC1736	Holder
	77	HBA-163	Screw		102	CLA1319	Screw
	78	CBH1138	Spring		103		Holder Unit
	79		Bracket Unit		104	CBH1106	Spring
	80		Holder Unit		105	CNV1513	Rack
	81	CBA-098	Screw		106	CNV1863	Cushion
★★	82		Bracket		107		Cover
	83	CXA2133	Motor Unit(Carriage)		108		Cushion
	84	CBH1104	Spring		109	YE12FUC	Washer
	85	CNV1844	Spacer				

• CD Mechanism

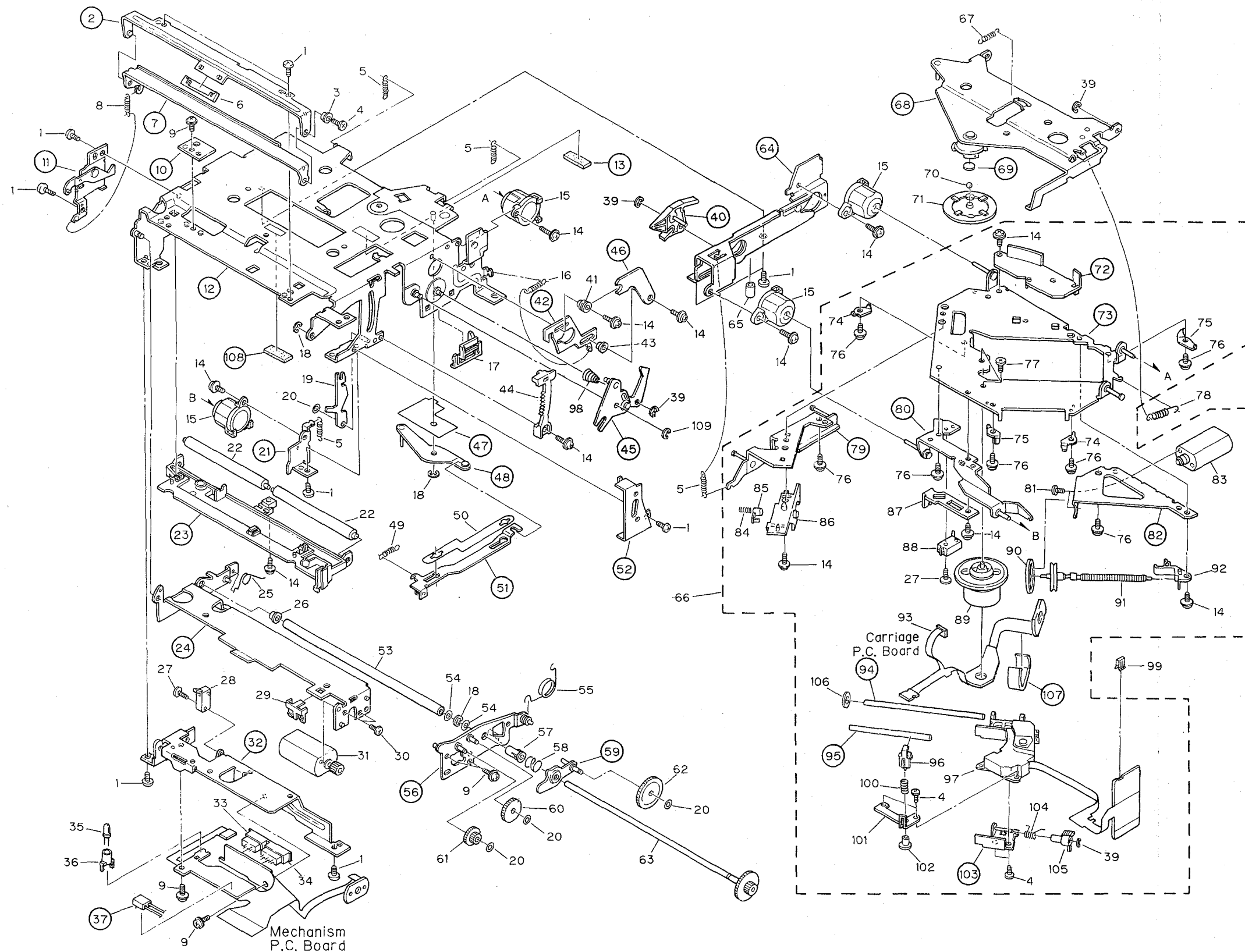


Fig. 58

16. CASSETTE MECHANISM EXPLODED VIEW

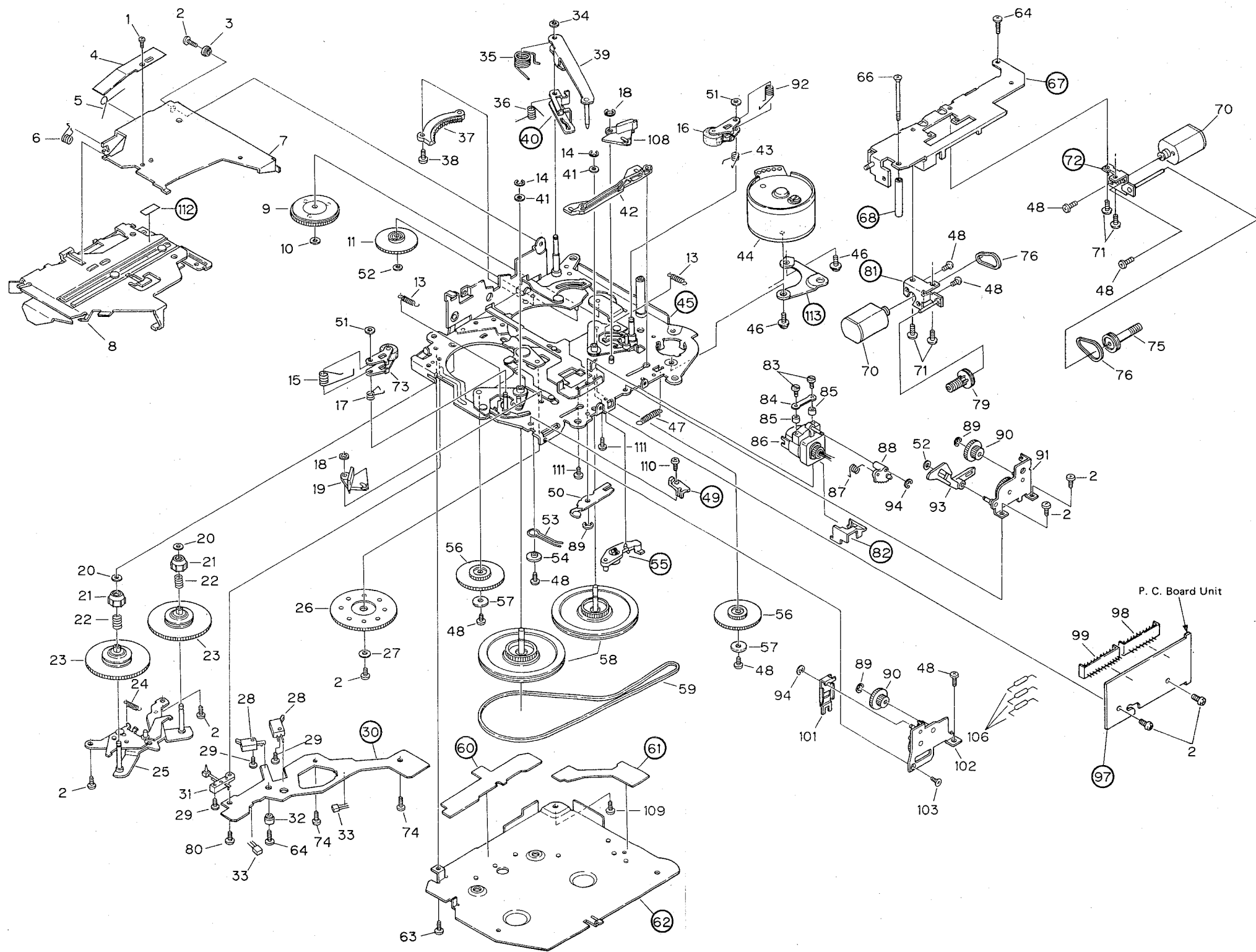


Fig. 59

## ● Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	HBA-147	Screw M1.4×1.4		46	PMS26P035FMC	Screw
	2	BMZ20P040FMC	Screw		47	CBH-830	Spring
	3	CLB-663	Bush		48	HBA-175	Screw M2×2.5
	4	CBE-119	Spring		49		Spacer
	5	CBH-867	Spring		50	CBL1050	Spring
	6	CBH-837	Spring		51	CBF1025	Washer
	7	CNC2373	Arm		52	CBF-126	Washer
	8	CXA2819	Holder Unit		53	CBH-893	Spring
	9	CXA2088	Gear Unit		54	CLA1110	Collar
	10	CBF1026	Washer		55		Clamper
	11	CNY-271	Gear		56	CNV1616	Gear
	12	.....			57	CLA1238	Collar
	13	CBH-835	Spring		58	CNV1572	Flywheel
	14	CBG1003	E Type Washer	★★	59	CNT-111	Belt
	15	CBH-832	Spring		60		Insulator
★★	16	CXA2608	Pinch Roller Unit		61		Insulator
	17	CBH1197	Spring		62		Cover
	18	YE25FUC	E Type Washer		63	BMZ20P030FMC	Screw
	19	CNV1254	Arm		64	CBA-172	Screw M1.7×5.5
	20	CBF1022	Washer		65	.....	
	21	CNW-932	Collar		66	CBA-165	Screw M2×25
	22	CBH-827	Spring		67		Guide
★★	23	CXA2089	Reel Unit		68		Spacer
	24	CBH-868	Spring		69	.....	
	25	CXA1481	Bracket Unit	★★	70	CXA2429	Motor Unit (FF/REW, Head Position)
	26	CNW-944	F/R Gear		71	HBA-174	Screw
	27	CLA1109	Collar		72		Bracket Unit
★★	28	CSN1003	Switch (70 $\mu$ S, CST IN)		73	CXA2609	Pinch Roller Unit
	29	CBA1025	Screw M1.7×5.5		74	CBA1037	Screw M2×2.5
	30		P.C. Board		75	CNV1255	Pulley
★★	31	CSN-089	Switch (CST SET)		76	CNT1010	Belt
	32	CLA1170	Collar	★★	77	.....	
	33	SDME106B	Magnetic Resistive Device		78	.....	
	34	CBF-046	Washer		79	CNV1256	Pulley
	35	CBH-887	Spring		80	CBA1054	Screw M2×5
	36	CBH-886	Spring		81		Bracket Unit
	37	CNV1075	Gear		82		Cover
	38	CBA1054	Screw M2×5		83	CBA1055	Screw M1.4×8
	39	CXD-389	Arm Unit		84	CBE-114	Spring
	40		Arm		85	CNY-134	Azimuth Rubber
	41	HBH-179	Washer	★★	86	CXA2462	Head Unit
	42	CNV1257	Lever		87	CBH-829	Spring
	43	CBH1196	Spring		88	CNW-939	Gear
★★	44	CXM1007	Motor (Capstan)		89	YE12FUC	E Type Washer
	45		Chassis Unit		90	CNV1262	Gear



Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	91	CXA1688	Holder Assy	★	106	1S1555	Diode
	92	CBH-831	Spring		107	.....	
	93	CNV1495	Arm		108	CNV1253	Arm
	94	YE15FUC	E Type Washer		109	CBA1060	Screw M2×7
	95	.....			110	CBA1015	Screw M2×4
	96	.....			111	CBA1041	Screw M2×2.5
	97		P.C.Board		112		Spacer
	98	CKS1055	Connector (8P)		113		Bracket
	99	CKS1059	Connector (12P)				
	100	.....					
	101	CNH-004	Arm				
	102	CXA1689	Holder Assy				
	103	HBA-209	Screw M2×2				
	104	.....					
	105	.....					

## 17. CHASSIS (1) EXPLODED VIEW

### • Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
◎	1	CWM1770	Key Board Unit	★	36	CAC1911	Button (OK)
	2		Holder	★	37	CAC1913	Button (APC)
	3	CWW1173	LCD	★	38	CAC1912	Button (PRO)
	4	CNV1777	Connector		39	.....	
	5	CNM2095	Plate	★	40	CAC1915	Button (FM)
	6	CNV1774	Lens	★	41	CAC1916	Button (AM)
	7		Connector	★	42	CAC1917	Button (CD)
★★	8	CEL-153	Lamp	★	43	CAC1918	Button (TAPE)
	9	CNM1993	Spacer		44	CBA1096	Screw
★★	10	CEL1071	Lamp		45		Case Unit
	11	CNV1773	Lens		46	BMZ50P060FMC	Screw
	12	CNV1776	Housing		47	.....	
	13	CNV1770	Lens		48		Case
	14	CNV1771	Lens		49		Case
	15	CNV1772	Lens		50		Insulator
	16	CNP1806	P.C.Board		51		Bracket
	17	BPZ20P080FMC	Screw		52	CKM1035	Connector
	18		Cushion		53		Connector
★	19	CAC1906	Button (AUTO, SCAN)		54		Plug
★	20	CAC1907	Button (1, 4)		55	CWB1005	FM Front End
★	21	CAC1908	Button (2, 5)		56		Plug
★	22	CAC1909	Button (3, 6)		57		Clamper
	23		Cushion		58		Plug
	24	CBH1044	Spring		59		Connector
	25	CAT1163	Door		60		Plug
★	26	CAC1914	Button (EJECT)		61		Plug
★	27	CAC1910	Button (UP, DOWN)		62		Plug
	28	CXA2590	Grille Unit		63		Clamper
★	29	CAA1141	Knob		64	CDH1097	Antenna Cable
★	30	CAA1168	Knob	◎	65	CWE1119	Tuner Unit
★	31	CAA1139	Knob				
	32		Insulator				
	33		Case				
	34	BMZ30P050FMC	Screw				
	35		Cushion				

• CHASSIS (1)

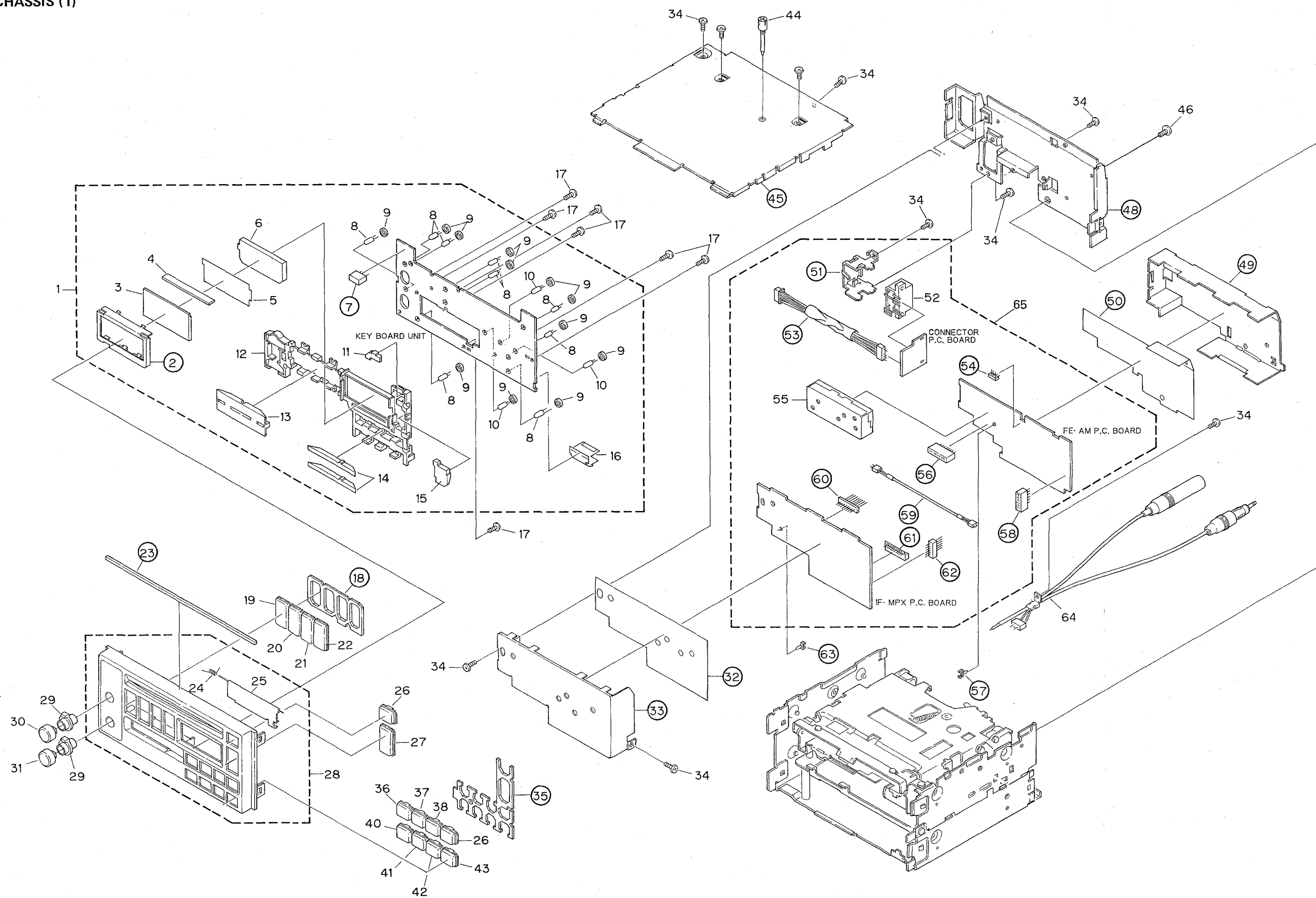


Fig. 60

18. CHASSIS (2) EXPLODED VIEW

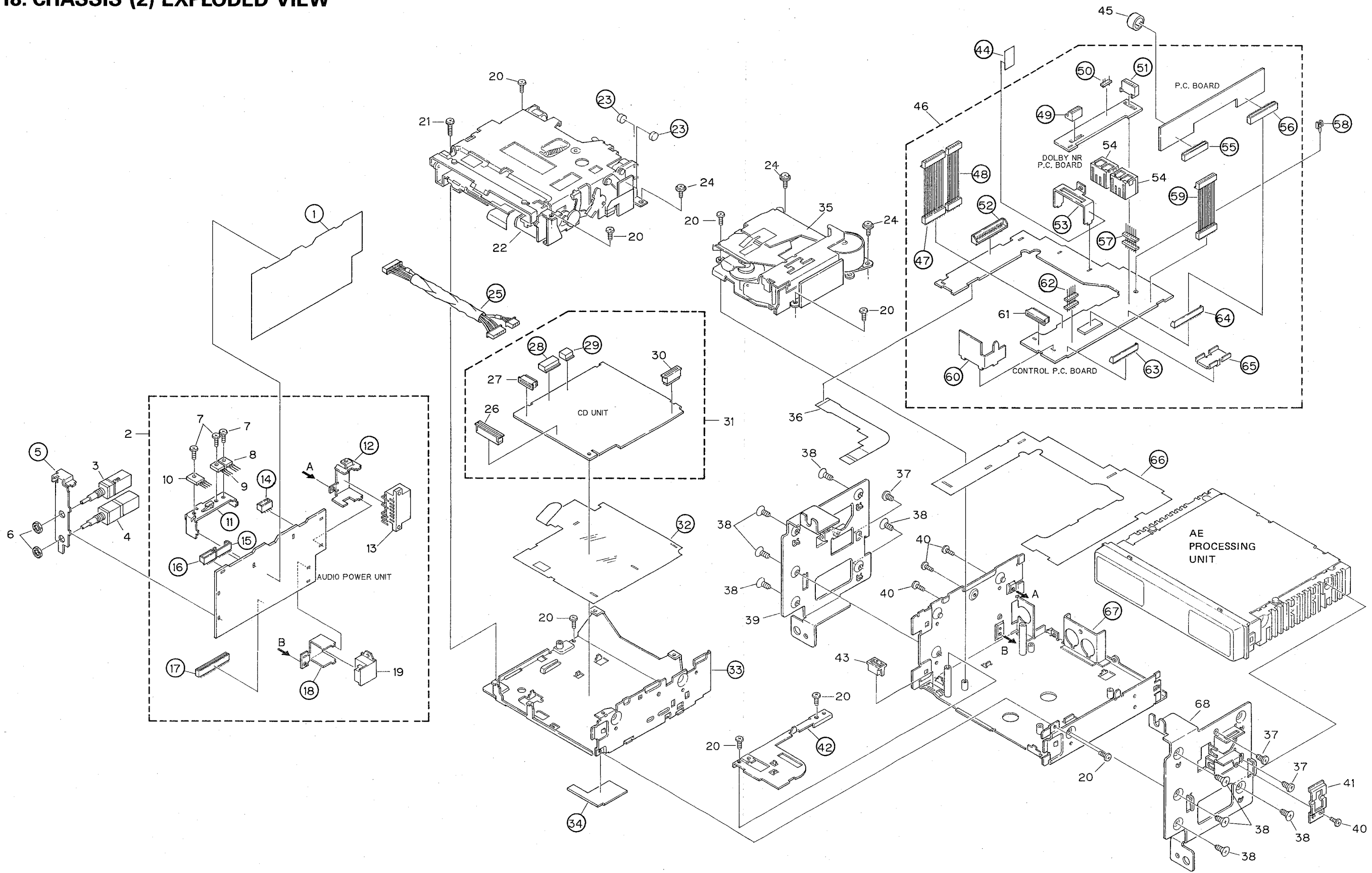


Fig. 61

## ● Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1		Insulator		36	CNP1968	P.C.Board
◎	2	CWM1775	Audio Power Unit		37	BMZ50P080FMC	Screw
★★	3	CCS1122	Volume		38	CMZ50P080FMC	Screw
★★	4	CCS1104	Volume		39	CNC2771	Bracket
	5		Bracket		40	BMZ30P050FMC	Screw
	6	NK70FMC	Nut		41	CNC2531	Holder
	7	BMZ30P060FMC	Screw		42		Bracket
★★	8	2SC3421	Transistor		43	CNV1823	Guide
★★	9	2SA1358	Transistor		44		Insulator
★★	10	AN7805R	IC		45	CPV1005	Buzzer
	11		Bracket	◎	46	CWM1769	Control Unit
	12		Bracket		47		Connector
	13	CKM1036	Plug		48		Connector
	14		Plug		49		Connector
	15		Plug		50		Plug
	16		Plug		51		Connector
	17		Connector		52		Plug
	18		Bracket		53		Bracket
	19	CKS1513	Plug		54	CKS1507	Connector
	20	BMZ26P050FMC	Screw		55		Connector
	21	PMA26P100FMC	Screw		56		Connector
◎	22	CXK2220	CD Mechanism Unit		57		Plug
	23		Insulator		58		Clamper
	24	PMF26P050FMC	Screw		59		Connector
	25		Connector		60		Bracket
	26	CKS1415	Connector		61	CKS1175	Connector
	27	CKS1169	Connector		62		Plug
	28		Plug		63		Plug
	29		Plug		64		Plug
	30	CKS1328	Connector		65		Heat Sink
◎	31	CWX1190	CD Unit		66		Insulator
	32		Insulator		67		Chassis
	33		Chassis		68	CNC2770	Bracket
	34		Spacer				
◎	35	CXK1695	Cassette Mechanism Assy				

## 19. AE PROCESSING UNIT EXPLODED VIEW

## • Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	CXA2614	Grille Assy (4141ZM)		25		Holder
★	2	CAC1929	Button (4141ZM)		26		Plug
★	3	CAC1852	Button (4041ZM)		27		Plug
	4	CXA2555	Grille Assy (4041ZM)		28		Plug
	5	BPZ20P060FMC	Screw		29		Plug
◎	6	CWK1024	AE, AMP Unit (4041ZM)		30		Plug
		CWK1026	AE, AMP Unit (4141ZM)		31		Holder
	7	CNV1934	Lens (4041ZM)		32	CKM1035	Plug
	8	CNV1935	Holder (4041ZM)		33		Case
★★	9	CEL-153	Lamp (4041ZM)		34	CDE2139	Connector
★	10	AA4524K	LED (4041ZM)		35	CDE2134	Connector
	11	CNV1942	Lens (4041ZM)		36	CDE2137	Cord
	12	BPZ20P060FZK	Screw (4041ZM)		37	CDE2138	Cord
	13	BPZ20P060FZK	Screw (4141ZM)		38		Case
	14	BPZ20P060FMC	Screw (4041ZM)		39		Heat Sink
	15	BPZ20P060FMC	Screw (4141ZM)		40		Insulator
★★	16	CEL-153	Lamp (4141ZM)		41	BMZ50P080FMC	Screw
★	17	AA4524K	LED (4141ZM)		42	CNC2358	Bush
	18	CNV1983	Holder (4141ZM)		43		Chassis
	19	CNV1984	Lens (4141ZM)				
	20	CDE2135	Connector				
	21	BMZ30P060FMC	Screw				
	22	BMZ30P140FMC	Screw				
	23		Heat Sink				
★★	24	TA8215H	IC				

A

B

C

D

A

B

C

D

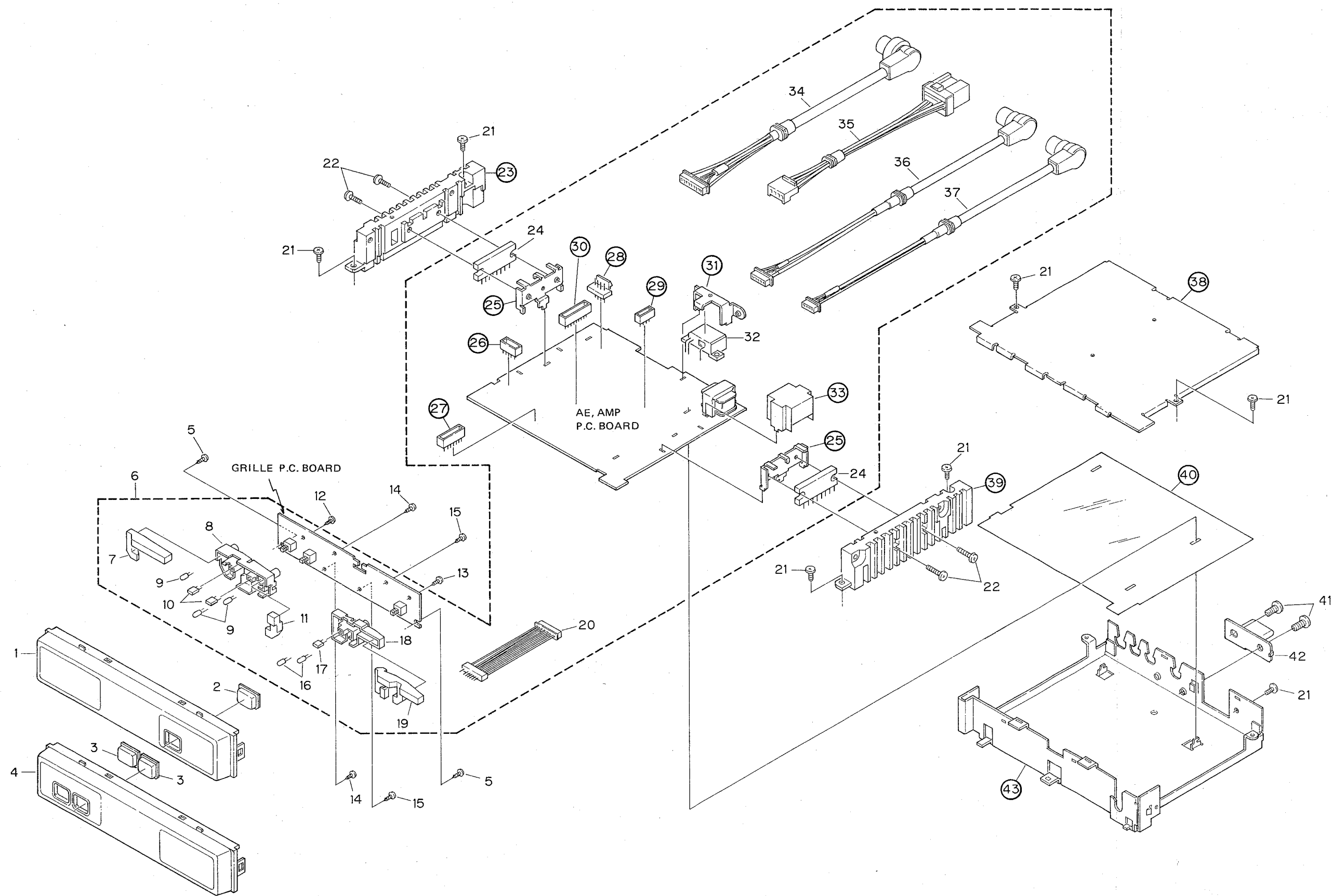


Fig. 62

20. ELECTRICAL PARTS LIST

NOTE:

- For your parts Stock Control, the fast moving items are indicated with the marks \*\* and \*.
- \*\* : GENERALLY MOVES FASTER THAN \*.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor  
RS1/8S□□□J, RS1/10S□□□J  
Chip Capacitor (except for CQS.....)  
CKS....., CCS....., CSZS.....

Unit Number : CWB1005  
Unit Name : FM Front End

MISCELLANEOUS

Mark	-----	Circuit Symbol & No.	-----	Part Name	-----	Part No.
** IC	1					CWW1015
** IC	2					PA4009
** Q	1					2SK241
** Q	2					2SC2753
** Q	3					2SK241
* D	1					KV1310A-3
L	1			Coil		CTC1001
L	2			Coil		CTC1002
L	3			Coil		CTC1003
L	4			Inductor		CTF-185
T	1			Coil		CTC1005
T	2			Coil		CTC1004
CF	1 2			Ceramic Filter		CTF-182

RESISTORS

Mark	-----	Circuit Symbol & No.	-----	Part Name	-----	Part No.
R	1 14					RS1/8S223J
R	2					RS1/8S473J
R	3					RD1/4PS222JL
R	4					RD1/4PS221JL
R	5 10					RS1/8S560J
R	6 9					RS1/8S683J
R	7					RS1/8S101J
R	8					RS1/8S680J
R	11					RS1/8S391J
R	12					RS1/8S331J
R	13					RD1/4PS680JL (RD1/6PS680J)

CAPACITORS

Mark	-----	Circuit Symbol & No.	-----	Part Name	-----	Part No.
C	1					CCSSH330J50
C	2					CCSSH390J50
C	3					CCSCH060D50 (CCSCH060C50)
C	4					CCSTH060C50 (CCSTH060D50)

Mark	-----	Circuit Symbol & No.	-----	Part Name	-----	Part No.
C	5 11 15 20					CKSYB222K50
C	6					CCSCH040C50
C	7 10					CKSYB103K50
C	8					CCSCH100D50
C	9					CCSSH560J50
C	12 18					CCSTH150J50
C	13					CCSTH330J50
C	14					CCSTH100D50
C	16 19 21					CKSYB223K50
C	17					CCSUJ080D50
C	22					CEA2R2M35LS
C	23					CEA3R3M25LS
C	24					CCSSH030C50

Unit Number :  
Unit Name : Tuner Unit

Tuner Unit
Consists of
• Connector P. C. Board
• FE-AM P. C. Board
• IF-MPX P. C. Board

MISCELLANEOUS

Mark	-----	Circuit Symbol & No.	-----	Part Name	-----	Part No.
** IC	101					LA1137N
** IC	131					PA5011
** IC	132					KHA141A
** IC	133					KHA505
** IC	134					LA2110
** IC	135					LA3430P
** IC	136					TA75558S
** IC	137					LC7218
** IC	138					KHA805
** Q	101					2SK435
** Q	102 135 138					2SC2458
** Q	103 104 131 133 134					DTC124ES
** Q	132 143 144					DTA114ES
** Q	136					2SJ105
** Q	137 140					2SC3113

Mark	-----	Circuit Symbol & No.	-----	Part Name	-----	Part No.
** Q	139					2SK330
** Q	141 142					2SA1150
* D	101 102 103 104 105 132 133 135 136 137					1SS133
* D	106					KV1280F1-2
* D	107 138 139 140					1SS133
* D	131					1SV99
* D	134					RD3ROESB2
* D	141					RD5R1JSB2
L	101			Ferri-Inductor		CTF-157
L	131 132 133 134			Ferri-Inductor		LAU150K
T	101			Coil		CTB-149
T	102			Coil		CTB-171
T	103			Coil		CTB1025
T	104			Coil		CTB1026
T	105			Coil		CTE1017
T	106			Coil		CTE1018
T	107			Coil		CTB1024
T	131			Transformer		CTC-195
T	132			Coil		CTC1029
CG	131 132			Surge Protector		DSP-301NS00B
CF	101			Filter		CTF-100
CF	102			Ceramic Resonator		CTF1039
CF	131			Ceramic Filter		CTF-182
CR	132					CWW1145
CR	133					CWW-107
X	131			Crystal Resonator		CSS1030
X	132			Ceramic Resonator		CSS1022
** VR	101			Semi-fixed 1kΩ (B)		VRTB4VS102
** VR	131 132 134			Semi-fixed 22kΩ (B)		VRTB4VS223
** VR	133			Semi-fixed 10kΩ (B)		VRTB4VS103
				FM Front End		CWB1005

RESISTORS

Mark	-----	Circuit Symbol & No.	-----	Part Name	-----	Part No.
R	101					RD1/4PS152JL
R	102 107 113 114 120 149 150					RS1/10S103J
R	103 133					RS1/10S471J
R	104 154					RS1/10S682J
R	105 135					RS1/10S330J
R	106					RS1/10S220J
R	108					RS1/10S394J
R	109 176 177 185 186 187 188 189					RS1/10S222J
R	110 146 160 161 162 178 183					RS1/10S472J
R	111					RS1/10S153J
R	112 174 175					RS1/10S223J
R	115 121					RS1/10S513J
R	116 167 168					RS1/10S101J
R	117					RD1/4PS562JL
R	118 119 145 170 171 172 173					RS1/10S104J
R	131					RS1/10S681J
R	132					RS1/8S4R7J
R	134					RS1/8S223J
R	139 158 180 181					RS1/10S102J
R	140					RD1/4PS331JL
R	141					RD1/4PS183JL
R	142					RD1/4PS682JL
R	143					RD1/4PS392JL
R	144					RD1/4PS472JL
R	147					RS1/10S474J

Mark	-----	Circuit Symbol & No.	-----	Part Name	-----	Part No.
R	148 151					RD1/4PS223JL
R	152 182					RD1/4PS222JL
R	153					RS1/10S392J
R	155					RS1/10S563J
R	156					RS1/10S393J
R	157 159					RS1/10S473J
R	163 164					RS1/10S332J
R	165 166					RD1/4PS333JL
R	169					RS1/10S334J
R	179					RS1/10S152J
R	184					RD1/4PS103JL
R	190					RD1/4PS104JL
R	191 192					RD1/4PS224JL

CAPACITORS

Mark	-----	Circuit Symbol & No.	-----	Part Name	-----	Part No.
C	101 104 108 109 110 116 117 123 139 140					CKSQYB223K25
C	102 111 113					CCSQCH100D50
C	103					CKSYB223K25
C	105 126					CCSQCH220J50
C	106 147					CEA101M10LS
C	107 115 142 143 163 164 168 182					CEA010M50LS2
C	112					CCSQCHO10C50
C	114 118					CKSYB333K25
C	119 180					CKSYF105Z25
C	120					CEA4R7M35LS
C	121 165					CEA3R3M50LS
C	122					CEA47M50LS2
C	124					CQPA751G2A
C	125					CCSQCH390J50
C	127					CQPA101G2A
C	128 133 137 144 150 151 154 170 172					CKSQYB103K50
C	129 153 161					CEA470M16LS
C	130					CCSQSL270J50
C	131 156 177					CKSQYB222K50
C	132 136 171 179					CEA100M25LS
C	134					CEA220M16LS
C	135					CCSQSL471J50
C	138					CKSQYB123K50
C	141					CCSQCH180J50
C	145					CEA4R7M16NPLL
C	146					CASA330K16
C	148					CEA2R2M50LS2
C	149					CKSYB473K25
C	152					CKSQYB182K50
C	155 159 160					CKSQYB332K50
C	157 158					CKSQYB183K25
C	162					CKSQYB102K50
C	166 178 181					CKSQYB223K25
C	167					CSZAR22K35
C	169					CCH1005
				4.7μF/16V		
C	173 174					CCSQCH101J50
C	175 176					CCSQCH270J50

Unit Number :  
Unit Name : AE, AMP Unit

AE, AMP Unit
Consists of · AE, AMP P.C. Board · Grille P.C. Board

## MISCELLANEOUS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
** IC 551 552				TA8215H	
** IC 553				M51953BL	
** IC 601 602				TA75558S	
** IC 603				CWW1059	
** IC 604				MN3003	
** Q 551 552 553 554				2SD1468S	
** Q 601 602				2SC2458L	
** Q 603 604 (K4041ZM)				DTC124ES	
** Q 605 606				DTC124ES	
** Q 607 608				2SA1048	
** Q 609				2SA1199S	
** Q 610				2SC2458	
** Q 611 612				2SD667	
* D 551				SM-3-02LFEA	
* D 601				MTZ7R5B	
* D 602				MTZ7R5C	
* D 901 902		LED (K4041ZM)		AA4524K	
* D 903		LED (K4141ZM)		AA4524K	
L 551		Choke Coil		CTH1017	
** S 901 902		Switch (K4041ZM)		CSG-248	
** S 903		Switch (MUTE) (K4141ZM)		CSG-248	
** IL 901 902 903		Lamp (K4041ZM)		CEL-153	
** IL 901 902		Lamp (K4141ZM)		CEL-153	

## RESISTORS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
R 551 645 646			(K4041ZM)	RD1/4PS222JL	
R 551			(K4141ZM)	RD1/4PS272JL	
R 552 635 636 637 638 690 693 695				RD1/4PS102JL	
R 553 554 565 566 578 615 616				RD1/4PS332JL	
R 555 556 567 568 579 601 602 609 610				RD1/4PS103JL	
R 557 558 569 570 679 680 694 696				RD1/4PS561JL	
R 559 560 561 562 571 572 573 574				RD1/4PS010JL	
R 563 564 603 604 659 660 667 668				RD1/4PS682JL	
R 575 580 581 582 673 674				RD1/4PS473JL	
R 576				RD1/4PS101JL	
R 577 617 618 663				RD1/4PS152JL	
R 601 602			(K4041ZM)	RD1/4PS153JL	
R 601 602			(K4141ZM)	RD1/4PS103JL	
R 611 612 649 650 651 652				RD1/4PS562JL	
R 613 614 621 622 665 666 689 691 692				RD1/4PS472JL	
R 619 620				RD1/4PS273JL	
R 623 624				RD1/4PS271JL	
R 627 628 631 632				RD1/4PS821JL	
R 629 630				RD1/4PS122JL	
R 633 634				RD1/4PS683JL	
R 639 640				RD1/4PS391JL	
R 641 642				RD1/4PS681JL	
R 647 648			(K4041ZM)	RD1/4PS334JL	
R 653 654 655 656 675 676				RD1/4PS104JL	
R 657				RD1/4PS100JL	
R 658				RD1/4PS823JL	
R 661 662				RD1/4PS222JL	
R 664				RD1/4PS153JL	
R 669 670			(K4041ZM)	RD1/4PS822JL	
R 669 670			(K4141ZM)	RD1/4PS471JL	

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
R 671 672			(K4041ZM)	RD1/4PS104JL	
R 671 672			(K4141ZM)	RD1/4PS103JL	
R 677 678				RD1/4PS221JL	
R 683 684				RD1/4PS333JL	
R 697 698				RD1/4PS331JL	
R 901 902 903			(K4041ZM)	RD1/4PS4R7JL	
R 904 905 906 907			(K4041ZM)	RD1/4PS271JL	
R 908 909			(K4141ZM)	RD1/4PS120JL	
R 910 911			(K4141ZM)	RD1/4PS391JL	
R 912			(K4141ZM)	RD1/4PS103JL	

## CAPACITORS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
C 551 552				CEA010M50L2	
C 553 554 567 568 637 638				CQMA222J50	
C 555 556				CEA100M16L2	
C 557 558 559 560 571 572 573 574				CQMA104J50	
C 561 564 620				CQMA103J50	
C 562 576				CEA221M16L2	
C 563 577			2200 $\mu$ F/16V	CCH-123	
C 565 566 604 605 606				CEAR68M50LS2	
C 569 570				CEA68M35LS	
C 575 609 610				CEA100M16L2	
C 578				CEA2R2M50LS	
C 579				CEA2R2M50LS2	
C 601 602				CEA010M50L2	
C 603				CEAR68M50LS	
C 607 608				CQFAH684J50L	
C 611 612				CQEA334J63	
C 613 614				CEA2R2M50L2	
C 615 616				CQMA563J50	
C 617 618				CQMA392J50	
C 619				CEA330M16L2	
C 621 622			(K4041ZM)	CQMA473J50	
C 623 624 631 632 633 634				CEA4R7M35L2	
C 625				CCCCH330J50	
C 627 628			(K4041ZM)	CQMA102J50	
C 626 639 640 641 642				CEA221M10L2	
C 629 630			(K4041ZM)	CQMA104J50	
C 635 636				CQMA183J50	
C 643				CEA102M6R3L2	
C 644			(K4141ZM)	CEA100M16L2	
C 901 902			(K4041ZM)	CEAR33M50L2	

Unit Number :  
Unit Name : CD Unit

## MISCELLANEOUS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
** IC 351				CXA1081M	
** IC 601				CXA1082AQ	
** IC 651 652				PA3023	
** IC 655 657				M5218FP	
** IC 656				M5233FP	
** IC 701				CXD1135Q	
** IC 702				CXK5816M-15L	
** IC 703				$\mu$ PD6355G	
** IC 704				KHA221A	
** IC 751				PD4136B	



Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
** IC	754				M54546AL
** Q	351				2SB822F
** Q	601 652 653 705			Chip Transistor	UN2211
** Q	651 701 760			Chip Transistor	UN2211
** Q	702 706 759			Chip Transistor	UN2111
** Q	703 704			Chip Transistor	2SD1048
** Q	758				2SD1226MP
* D	651				ERA15-02
* D	652				ERA82-004Y
* D	653 654 655 656 657 658 659				ERA82-004VH
* D	661 662				HZS2ALL
* D	701			Chip Diode	MA151WA-MN
* D	702			Chip Diode	MA151K-MH
* D	755			Chip Diode	MA3062
L	651			Choke Coil	CTH1035
TH	351			Thermister	CCX1001
TH	751			Thermister	CCX-021
X	701			Crystal Resonator	CSS1027
X	751			Ceramic Resonator	CSS-042
** VR	351			Semi-fixed	CCP1005
** VR	352			Semi-fixed	CCP1006
** VR	604			Semi-fixed 2.2k $\Omega$ (B)	HCP-267
** VR	651			Semi-fixed 47k $\Omega$ (B)	HCP-275

## RESISTORS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
R	351				RS1/2P220JL
R	353 381 708 709 714 724 725 726 727 728				RS1/10S102J
R	354 363 378				RS1/10S223J
R	355 610 625				RS1/10S113J
R	356 357 358 359 669				RS1/10S563J
R	360 361				RS1/10S124J
R	362 763				RS1/10S564J
R	364 365 618 671				RS1/10S105J
R	366 377 666				RS1/10S562J
R	367 780				RS1/10S104J
R	379 722 723				RS1/10S472J
R	380 617 628 682				RS1/10S203J
R	382				RS1/10S363J
R	383				RS1/10S823J
R	384 630				RS1/10S273J
R	601 602				RS1/10S101J
R	606				RS1/10S224J
R	607				RS1/10S683J
R	608				RS1/10S823J
R	609 614 619 627 773				RS1/10S104J
R	611				RS1/10S432J
R	612				RS1/10S623J
R	613				RS1/10S624J
R	616				RS1/10S183J
R	620				RS1/10S332J
R	621				RS1/10S184J
R	622 670 687 696 697 715 718 719 751				RS1/10S103J
R	623				RS1/10S473J
R	624				RS1/10S393J
R	629				RS1/10S153J

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
R	631				RS1/10S272J
R	634				RS1/10S474J
R	665 790				RS1/10S821J
R	667 684 686 717				RS1/10S472J
R	668 679				RS1/10S392J
R	672				RS1/10S364J
R	673				RS1/10S473J
R	674 710 711 716				RS1/10S332J
R	676 799				RS1/10S201J
R	677				RS1/10S201J
R	678				RS1/10S223J
R	680				RS1P1R5JL
R	681				RS1/10S203J
R	683				RS1/10S101J
R	685 692				RS1/10S105J
R	690				RS1/10S272J
R	691 703 755				RS1/10S103J
R	694 786				RS1/10S822J
R	701				RS1/10S100J
R	712 713				RS1/10S392J
R	721				RS1/10S4R7J
R	747				RS1/10S0R0J
R	752 775				RS1/10S103J
R	753 754 756 779				RS1/10S681J
R	766 767				RS1/10S681J
R	770 771 772				RS1/10S222J
R	774				RS1/10S333J
R	787				RS1/10S0R0J

## CAPACITORS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
C	351				CEA101M6R3LS
C	352 611 625 626 662 664 713 721 724 727				CKSQYB103K50
C	353 613 666				CKSQYB333K25
C	354 357				CASA330M6R3
C	355 667 668 714				CKSQYB103K50
C	356				CKSQYB332K50
C	359 614				CEA47M50LS
C	360 361				CSZS010M16
C	370 703 704				CCSQCH220J50
C	371 615				CKSQYB102K50
C	372				CCSQCH100D50
C	373 627				CCSQCH220J50
C	601				CKSQYB222K50
C	602 653 708 709				CEA100M25LS
C	603 607 612 716				CEA100M6R3LS
C	605 620 622 628 629				CKSQYB473K25
C	606				CEA220M16LS
C	608				CEA220M6R3NPLL
C	609 756				CKSQYB472K50
C	610 619				CCSQCH221J50
C	616				CEA220M6R3LS
C	617				CCH1050
C	618				CKSQYB682K50
C	621				CEA4R7M16NPLL
C	623				CKSQYB272K50

4.7 $\mu$ F/16V

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
C	624				CCSQCH391J50
C	651 670				CKSYF224Z25
C	652	470 $\mu$ F/16V			CCH-114
C	654 658				CCSQCH221J50
C	656				CEA100M16LS
C	661 663				CEA010M50NPLL
C	665 678				CKSYB473K25
C	671 672				CSZSR68M20
C	674 705				CASA100M6R3
C	675 676				CEA2R2M35LS
C	677 679				CCSSQL681J50
C	680				CCSSQL681J50
C	681				CKSYB393K25
C	701 710 712 726				CASA6R8M6R3
C	702				CASA220M6R3
C	706 707				CCSQCH470J50
C	717 718				CEA470M6R3LS
C	719				CEA101M6R3LS
C	720				CEA101M6R3LS
C	722 723				CEA330M6R3LS
C	728 729 751 758				CKSQYB103K50
C	752				CCSQCH300J50
C	753				CCSQCH300J50
C	755				CEA221M6R3LL
C	757				CASA6R8M10

Unit Number :  
Unit Name : Control Unit

Control Unit
Consists of
• Control P. C. Board
• Dolby NR P. C. Board
• P. C. Board

## MISCELLANEOUS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
**	IC 801				PD4155P
**	IC 802				PA3022A
**	IC 803				M51953BL
**	IC 804				M51957BL
**	IC 871				M51522AL
**	IC 872				CXA1102P
**	Q 801 802 813	Chip Transistor			2SC2712
**	Q 803 805				2SC2458
**	Q 804 806 809 871 872 873				DTC124ES
**	Q 807				2SA1358
**	Q 808				2SD1640
**	Q 810 811				2SD1864
**	Q 812 874				2SA1048
*	D 801 802 803 804 805 809 810 813 815 819				1SS133
*	D 806 808 812				RD6R8JSB3
*	D 807				RD22JSB1
*	D 811 814				RD6R2JSB2
*	D 817 820 821 822 871				1SS133
L	801 802	Ferri-inductor			LAU150K
CR	871				CWW1087

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
IB	801 802 803				CWW1048
X	801	Crystal Resonator			CSS1023
**	VR 871 872	Semi-fixed 470 $\Omega$ (B)			VRTB4VS471

## RESISTORS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
R	801 805 809 810 811 812 846 847 848 849				RS1/10S472J
R	802				RS1/10S392J
R	803				RS1/10S684J
R	804				RS1/10S562J
R	806 807 808 814 828 881 882				RS1/10S473J
R	813 815 816				RD1/4PS473JL
R	817 830				RD1/4PS104JL
R	818 819 820 825				RS1/10S681J
R	821 822 823 824				RS1/10S682J
R	826 827 831 839 841 842				RS1/10S103J
R	829 837 844 845				RS1/10S223J
R	832				RS1P561JL
R	833				RS1/8S223J
R	834				RS1/8S222J
R	835 855 879 883 884				RD1/4PS102JL
R	873				RD1/4PS101JL
R	838 836				RD1/4PS561JL
R	840				RD1/4PS221JL
R	843				RS1/8S561J
R	850 851 852 853				RS1/10S472J
R	854				RD1/4PS332JL
R	874				RD1/4PS433JL
R	875 877				RD1/4PS103JL
R	876 878				RD1/4PS223JL
R	885 886				RD1/4PS821JL

## CAPACITORS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
C	801 802 818 820 822 825				CEA220M16LS
C	803 830				CEA101M16LL
C	804				CKSYB223K25
C	805 806 807 808 809 810				CKSYF473Z50
C	811 814				CCSQCH330J50
C	812				CKSQYB392K50
C	813 829				CKSYF104Z25
C	815				CEA470M16LS
C	816 831				CKSQYF473Z25
C	817 819 821 824 826 827				CKSQYB223K25
C	823				CEA010M50LS2
C	828 883 884				CEAR68M50LS2
C	870				CCSCH090D50
C	871 872				CKSQYB561K50
C	873 874				CEANL4R7M35LL
C	875 876				CEA470M16L2
C	878 882 887				CEA101M10LS
C	879 880				CEALNP010M50
C	881				CEAR15M50LS2
C	885 886				CEA4R7M35LS

Unit Number :  
Unit Name : Key Board Unit

## MISCELLANEOUS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
** IC 901					LC7582P
* D 901				LED	MU16-3105
** IL 901 902 903				Lamp	CEL1071
** IL 904 905 906 907 908 909 910 911 912				Lamp	CEL-153
** S 901 902 903 904 905 906 907 908 909 910				Switch	CSG-253
** 911 912 913 914 915 916 917 918 919				LCD	CWW1173
R 901					RD1/4PS104JL
R 902					RN1P6R8JL
C 901					CKPYB331K50L
C 902					CKPYF223Z25L

Unit Number :  
Unit Name : Audio Power Unit

## MISCELLANEOUS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
** IC 201					KHA125
** IC 202 203 204					TA75558S
** IC 205					AN7805R
** IC 206					M5236L
** Q 201 202					DTC343TS
** Q 203 211					DTC124ES
** Q 204					2SB1243
** Q 205					2SA1358
** Q 206					2SC3421
** Q 207 209					DTC114ES
** Q 208					2SB1357
** Q 210					DTA124ES
* D 201 202 205 206					1SS133
* D 203					RD9R1JSB2
* D 204					RD6R8JSB3
* D 207 210 211					ERA15-02VH
* D 208 209					SM-3-02LFDA
* D 212					RD5R6JSB2
L 201 202				Coil	CTH1053
L 203				Ferri-Inductor	CTF-157
CR 201					CWW1131

## RESISTORS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
R 201					RS1/10S393J
R 202					RD1/4PS222JL
R 203 204					RS1/10S102J
R 205 206					RS1/10S332J
R 207 208 217 218 219 220 221 222 223 224					RS1/10S472J
R 209 210 234					RS1/10S472J
R 211 233					RS1/10S392J
R 212					RS1/8S472J
R 213 214 215 216 237					RS1/10S333J
R 225 226 227 228 241 242					RS1/10S101J

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
R 229 230 231 232 243 244					RS1/10S223J
R 235 236 239					RS1/10S103J
R 238					RS1/8S333J
R 240 258					RS1/8S103J
R 245					RD1/4PS221JL
R 246					RD1/4PS561JL
R 248 249					RS1/8S152J
R 250					RD1/2VS102JL
R 251					RS1/8S223J
R 252					RS1/8S102J
R 253 254					RD1/4PS101JL
R 256					RD1/4PS223JL
R 257					RD1/4PS103JL
R 259					RS1/10S221J

## CAPACITORS

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
C 201 202 203 204					CEA100M16LS2
C 205 206					CEA2R2M50LS2
C 207					CKSYF105Z25
C 208 222 227					CEA101M10L2
C 209 210 211 212					CEAR47M50LS2
C 213 214 215 216					CEA010M50LS2
C 217 218 219 220 223 224 225 226					CEA4R7M35LS
C 221 244					CEA101M10LS
C 228					CKSQYB223K25
C 229 232					CEA221M10L2
C 230					CKSQYB153K50
C 231 238 239					CEA470M25L2
C 233 237					CKSYB473K25
C 234					CEA010M50L2
C 236					CEA100M50L2
C 240 241 242 247			1000 $\mu$ F/16V		CCH1003
C 243			2200 $\mu$ F/16V		CCH-123
C 250					CCG1004

Unit Number :  
Unit Name : Switch P.C. Board

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
** S 1				Switch(CST SET)	CSN-089
** S 2 3				Switch(CST IN, 70 $\mu$ s)	CSN1003
MR 1 2				Magnetic Resistive Device	SDME106B

Unit Number :  
Unit Name : P.C. Board Unit

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
* D 1 2 3					1S1555

Unit Number :  
Unit Name : Carriage P.C. Board

Mark	====	Circuit Symbol & No.	====	Part Name	Part No.
** M 831				Motor Unit(Spindle)	CXM1033
** M 832				Motor Unit(Carriage)	CXA2133
** S 831				Switch(Home)	CSN-094

Unit Number :

Unit Name : Mechanism P.C. Board

Mark ===== Circuit Symbol &amp; No. ===== Part Name Part No.

** Q 831	Photo-Transistor	PH102-F
** D 831	LED(Disc Detect)	SLR-981A
** M 833	Motor Unit>Loading)	CXA2129
** S 832	Switch(Disc Set)	CSN1009

## Miscellaneous Parts List

Mark ===== Circuit Symbol &amp; No. ===== Part Name Part No.

**	PU Unit	CGY1007
**	Head Unit	CXA2462
** M 1 2	Motor(Head.FF/REW)	CXA2429
** M 3	Motor(Capstan)	CXM1007
BZ 801	Buzzer	CPV1005
** VR 1	Volume	CCS1104
** VR 2	Volume	CCS1122